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ABSTRACT

This four-part monograph discusses the competency-based teacher education (CBTE) program at the State University of New York (SUNY) at Albany. The report attempts to (a) state the purpose and goals of the CBTE model, (b) suggest operation procedures, and (c) offer aids to facilitate development of a CBTE program. Part 1 presents a statement of the philosophical view of CBTE and sets guidelines for working in a CBTE mode. This section also discusses the limits of CBTE and explains and interprets the essential elements of the CBTE program. Part 2 presents the model used in the SUNY at Albany College of Education program. Part 3 provides a step-by-step procedure for creating a CBTE program, building on an institution's existent teacher-preparation program. Part 4 helps guide administrators, with questions and suggestions for judging the effectiveness of the CBTE program. Figures illustrating the CBTE model and a sample evaluation form are included. (Author/JS)

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A CBTE CURRICULUM MODEL

and

DIRECTIONS FOR ITS ASSEMBLY

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PREFACE

Competence-based teacher education is a specific application of the concepts of competence-based education. Competence-based education rests upon a number of assumptions. Among which are the following briefly stated:

1. Education consists of attaining and using knowledge, skills, attitudes and experiences. Many of these can be analyzed, specified and structured as intended outcomes or objectives. Once these outcomes have been analyzed and specified, instruction may be designed to enable students to attain them.

2. Professional educators can be held accountable only for diagnosis and skillful prescriptions, in the form of instructional sequences designed to bring about intended outcomes. Learners are responsible and accountable to themselves for their own learning. Learner responsibility is possible as the learner is informed of the intended outcomes or objectives, how objectives will be measured, and provided appropriate instruction.

3. Over time, geography, and other parameters, different competencies will be thought necessary. That is as research analyzes new knowledge, skills and attitudes and as situations vary, the knowledge, skills and attitudes which should be taught will vary. Therefore, the process of developing and implementing a competence-based program is more important than the program as it may exist, in any one

place, at any one time.

4. The society, the instructor, the learner, the school, eventual employers and others all have a legitimate interest in a) specifying the knowledge, skills and attitudes to be mastered, b) helping to design and implement the training and, c) verifying the competence of those prepared through their joint efforts.

From these assumptions, the work of the Teacher Education Developmental Service has developed and grown. We have emphasized the development of a collaborative process for the systematic analysis of curriculum. From that analysis CBTE programs evolve.

Our objective for this work is to put down on paper in brief yet direct terms (1) what we believe, (2) our suggestions on procedure and (3) other aids we have found to facilitate development of a CBTE program. We believe we have done just that.

This work includes several sections. Section One presents a statement of our philosophical view of CBTE and therefore our guideline for working in a CBTE mode. Section Two sets before the reader one model, our model, for CBTE programs. Section Three provides a step by step procedure for the creation of a CBTE program which starts with an institution's existent teacher preparation program. Program evaluation and renewal questions and suggestions follow in Section Four. This is not

presented as a prescription but as a place to begin. It includes suggestions from some of us who have been living with CBTE programs and have learned how to survive and thrive in this environment.

The sequence of this work is, a least in part, arbitrary. To alleviate this tyranny we have confined the basic presentation to the left side of the page, leaving the right hand column for our notes and yours. Our notes cross-reference the presentation internally. Your notes obviously should meet your needs. We hope this labor of love provides you with some help and direction.

RATIONALE FOR COMPETENCE-BASED TEACHER EDUCATION

The words "teacher education" mean many things to many people. Here the words mean the preparation of men and women for initial service as teachers. Competence or Performance-based refers to the program structure and instructional delivery system for preparing teachers.

This is addressed to all educators who are seeking a rational and humanistic approach to the competence-based teacher education movement. The views presented here have evolved from the accumulated experience of a number of people who planned, implemented and evaluated a competence-based teacher education program involving SUNY-Albany and the Schenectady, New York school system.

These views were first published by Dan Ganeles in Adult Leadership *Volume 23 Number 6, December, 1974, p. 187-189,*

and in

PBTE, *Volume 3, Number 2 May, 1974, p. 4, 5. Published by the Multi-State Consortium on Performance-Based Teacher Education.*

No teacher preparation program has ever provided all the skills, understandings, attitudes and experiences necessary to certify the perfect teacher. All of us who teach, know that there is no substitute for experience and continual renewal through continuing inservice education, interaction with peers, learners, and the world round about us. Nor will a competence-based teacher education program prepare the perfect teacher for certification. However, we believe, and we are beginning to amass evidence as proof, that a competence-based teacher education program will prepare teachers with a broader base of knowledge, performance skills, teaching processes and experiences upon which to integrate continuing experience and renewal activities. In other words, beginning teachers,

Limits of CBTE

prepared in a competence-based program will be better beginning teachers than those prepared in traditional programs.

Many sources exist which seek to define or explicate the elements of a competence-based teacher education program. Keep in mind that we are talking about a teacher preparation program for entry level which utilizes a competence-based instructional approach. The following is a list and brief explaination of the essential elements of that instructional approach.

List of essential elements in order of significance:

1. Specification of intended learning outcomes or objectives stated as knowledge, skills, behaviors, or experiences are (a) planned, devised, derived, with, by or for (then accepted by) the learner, (b) made known to learners before instruction, and (c) so stated as to make assessment possible.

2. Criteria and means for assessing attainment of outcomes are specified and communicated to the learner before instruction.

3. Instruction is explicity designed and available to guide learners toward reaching the stated outcomes or objectives.

4. Assessment of the attainment of outcomes or objectives uses, as the primary source of evidence, (1) what the learner is able to do as a result of instruction or involvement in a learning activity or (2) where valid and feasible, the consequences of what he does, or what he knows.

5. Demonstration of stated outcomes or objectives at or above the level specified in the criteria is the learner's responsibility and wherever possible, determines the instructional pace.

Explanation and interpretation of essential elements.

For good or ill, no unanimity currently exists among teacher preparation programs as to required courses or specific outcomes or objectives to be met or content mastered for certification. Competence-based teacher education will not change this.

All recognize however, that teacher education programs must provide learners with: (1) opportunities and the means to gain theoretical knowledge in a variety of content areas process skills and personal skills, (2) opportunities to select and practice, under supervision, those knowledges and skills most appropriate to help various learners in a variety of situations, and (3) certain kinds of experiences designed to enhance the cognitive processes and the affective development of beginning teachers.

A competence-based teacher education program differs not in intent nor content, from traditional teacher education but in form and process. That is, competence-based teacher

education programs ought to require the specification of intended outcomes or objectives through a collaborative decision making process involving professional teachers, school administrators, university personnel and learners. The program then makes those objectives public and explicit to the learners prior to instruction, that is, it informs the learners what they must know, do, or experience in order to qualify for entry as a beginning teacher. Additionally, the program takes the responsibility to provide a rationale, a statement explaining why an outcome, objective, or content area is important, information about how attainment of the objective will be assessed and by what criteria, and instruction directly related to the objectives specified.

Competence-based teacher education demands that each learner give evidence of specified knowledge, skills and experiences. It therefore puts into practice the often talked about, seldom attained educational virtues of personalizing instruction, learner responsibility for learning, and selected application of the learning.

Contrary to the posture of certain critics of competence-based teacher education that this form of teacher education assumes that the teaching act is the sum of performances into which it is analyzed, competence-based teacher education operates on the premise that the teaching act is greater than the sum of the performances. Simply preforming the specified discrete acts

bears little relationship to the role of teachers, and no competence-based teacher education program would be complete without requiring those persons being prepared as teachers to select those performance skills, climates, materials or resources which, in their best judgement and based on theory and practice, help their students attain learning objectives. We call this phase in the competence-based teacher preparation program the "orchestration phase", best accomplished in a clinic teaching period where interns or teachers-to-be have continuing responsibility for the educational development of learners in field settings, under supervision, after mastering a repertoire of discrete performances, skills and knowledge.

The phrase Clinic Teaching is borrowed from medical education and refers to a period of closely supervised practice following formal training.

This "orchestration phase" requires teacher selection of skills, performances, climates, and resources based on knowledge of educational, psychological and sociological processess and theories, interfaced with the personality and artistry of the teacher. It calls for the appropriate mix of the technology of the teaching act, a theoretical framework for selection of those acts, and the artistry of the personality making the selections.

Our rationale for CBTE does not presume to answer or even raise all the questions related to competence-based teacher education. Its sole purpose is to clarify the philosophical and operational base which has evolved from our experience with competence-based teacher education.

programs. Others considering or planning to implement competence-based teacher education programs may find this appropriate and useful or they may need to develop their own rationale.

We have come to recognize that the words 'performance' and 'competence' are inappropriate when used to describe that which has come to be known as competence-based or performance-based teacher education. Everything an entry level teacher education program ought to require cannot be stated in precise behavioral terms. That which can, ought to be; that which cannot, must be treated somewhat differently. For example, beginning teachers of any learner population should have an opportunity to explore the theories and develop applications of various teaching styles. Among these are: didactics, the

Didatics, Heuristics and Philetics are more fully described in Realms of Meaning *by Phillip H. Phoenix New York, McGraw Hill Book Company, 1964.*

impartation of knowledge by the teacher to the learner; heuristics, efforts to help the learner discover a body of knowledge, or a process and assess it for himself; philetics, securing rapport or "relating to learners." The heuristic and philetic styles do not readily lend themselves to precise statements of objectives, in the fashion of Popham, Mager, et al. Yet, we may specify that each person being prepared as a teacher experience all that may be involved in teaching situations which help learners discover a body of knowledge or methods of arriving at such knowledge and assessing it (heuristic), or seeking to secure rapport with learners (philetic). We may write that objective as follows: "Plan and teach

Popham, W. James and Baker, Eva. L. Planning an Instructional Sequence, Englewood Cliffs, N.J. Prentice Hall, 1970.

Systematic Instruction Englewood Cliffs, N. J. Prentice Hall, 1970

Mager, Robert F. Preparing Instructional Objectives Palo Alto, California, Fearon Publishers, 1962.

a lesson (or group of lessons) utilizing the heuristic style. Competence will be judged by agreement between you and your supervisor or by 90 percent of the qualified observers of your effort based upon criteria for heuristic teaching style pre-established by you and your supervisor."

This objective requires a study by the teacher of the theory supporting the heuristic style, development of criteria related to the content of instruction, planning and teaching the lesson, and evaluation by the teacher in concert with his supervisor or others involved in assessment.

Colleges and universities preparing persons for entry into the teaching profession

ought to be able to say to the certifying agency and therefore to the hiring official, "These are the skills our graduate has successfully demonstrated in clinic teaching situations. These are the theories and processes our graduate knows and has applied appropriately in clinic teaching experiences. These are the experiences our graduate has had related to teaching". Specific statements about the graduate's personality, cooperation, attitudes, etc., (the traditional subjective statements usually found on teacher evaluation forms) may then be added to round out the recommendation.

This provides the hiring agent with a description of

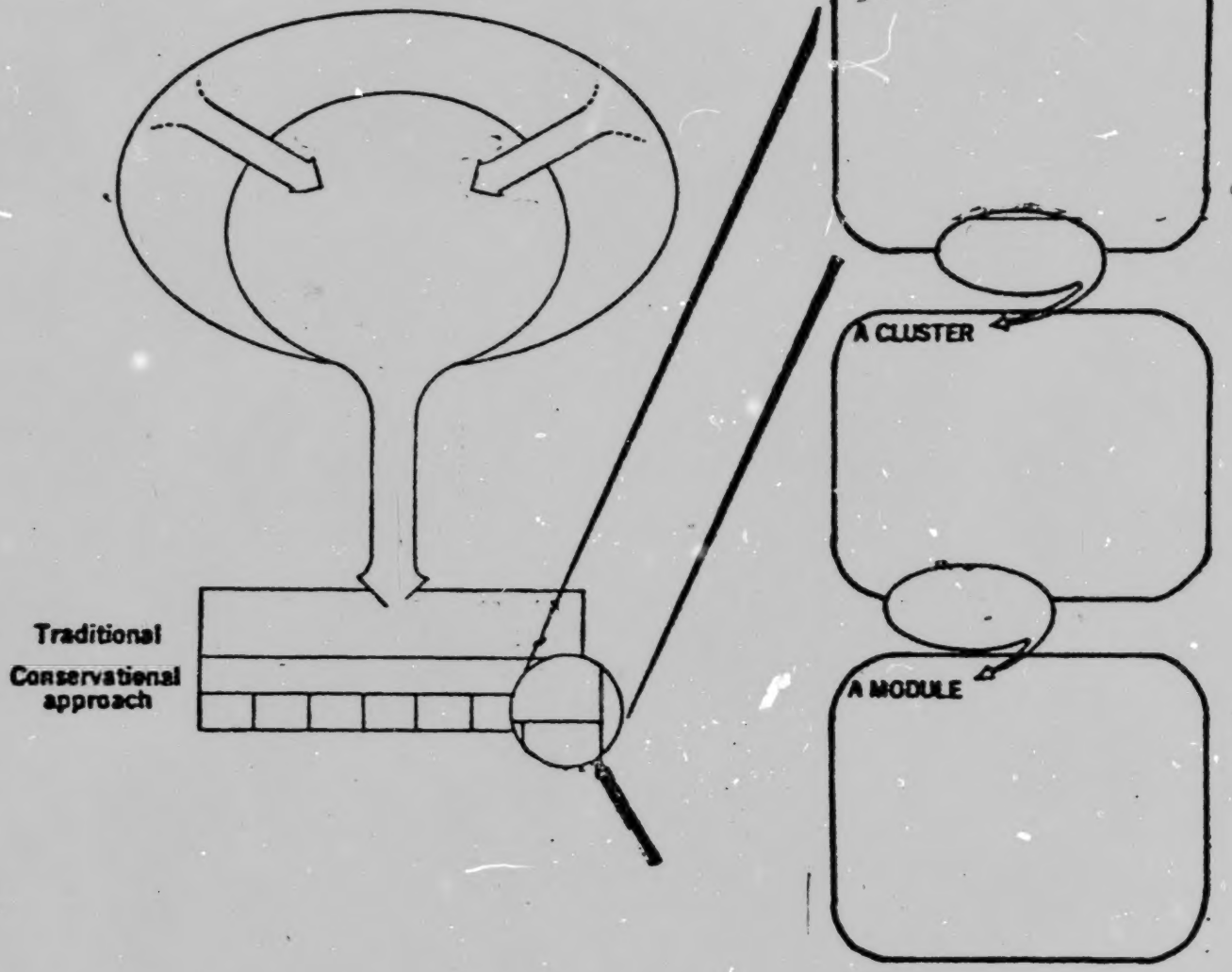
the candidate's behaviors, knowledge and skills, and some insight into attitudes so that a particular vacancy may be filled by a teacher having specific appropriate characteristics.

We do not believe that CBTE is a complete answer to all teacher education problems. We do believe that it is a rational way to conceptualize, plan and systematically analyze a teacher education program. A CBTE program contains specific statements of: objectives, assessments, and standards of success. In a CBTE program all these are made known to learners before instruction, also, the process for establishing and modifying program statements is made known. The content of a CBTE program

may well include teaching styles and philosophies which do not lend themselves to the competence-based format. A CBTE program, like any curriculum, should be thought of and designed as a whole and not as a series of unrelated activities. Using the CBTE format for analyzing or developing a program is a giant step toward the improvement of teacher education. Its most valuable contribution will be to make the teacher education program clear to all concerned people.

Based on this rationale, and much experience, we present a model for CBTE curriculum structure and directions for assembling it.

MODEL CURRICULUM STRUCTURE FOR A CBTE PROGRAM



A MODEL CURRICULUM STRUCTURE FOR A CBTE PROGRAM: AN EXPLANATION AND DESCRIPTION

This model seeks to portray the structural format of a competence-based teacher education program, not its content. Any program preparing educational personnel may utilize this model to analyze and give structure to that effort. A process for developing curriculum according to this model is presented in the next paper. Cross references between these are presented in the right hand margin.

Described on Page 41

Teacher education programs have always sought to prepare competent teachers. The competence-based teacher education format and process will further the effort by assuring the public and the profession that graduates

who are certified have demonstrated specified knowledge, performances and experiences, and integrated them into the teaching act prior to employment. In other words, the intent and content are the same in both the traditional and CBTE programs. The processes, format and structure differ.

This structural model for a CBTE program begins with the desired overall outcomes/goals of the preparation program, and proceeds to the smallest portions of the individual courses.

The actual development of curriculum suggested in the next paper moves in the opposite direction, starting with the particular and building to the general.

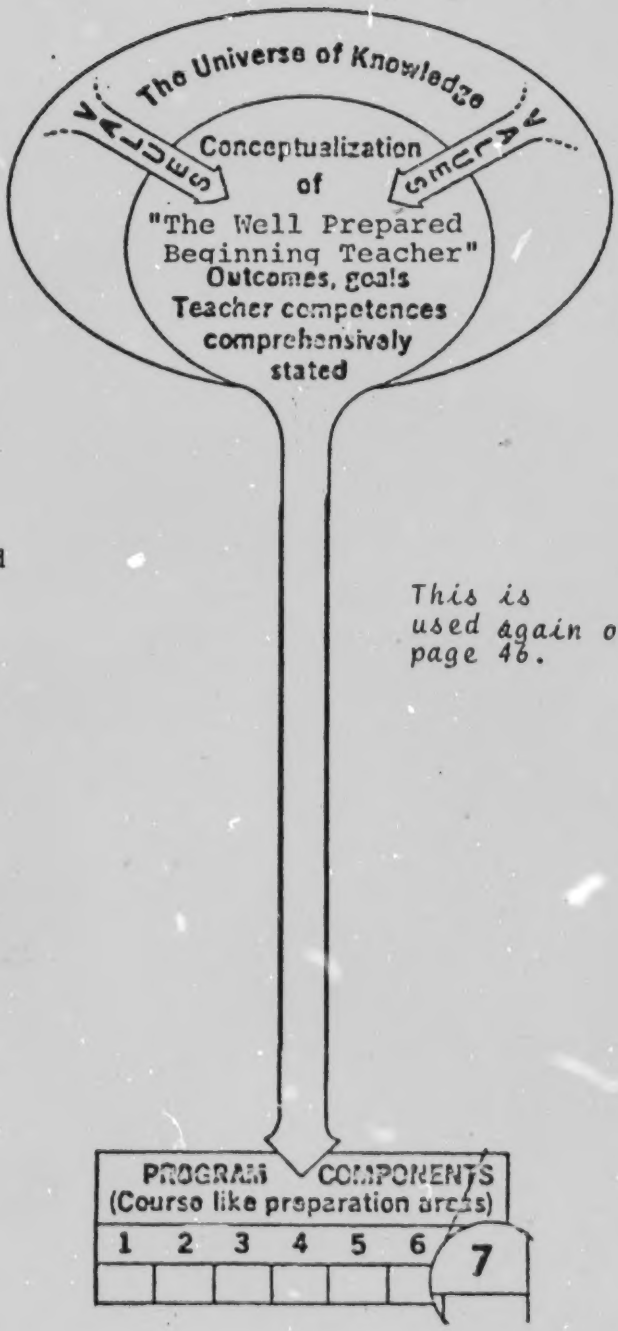
The pages which follow contain a written explanation and description of each portion of the model. Although this paper uses the beginning teachers entering the profession (provisional certification) as an example, the

model may also serve other educational job titles and programs leading to permanent certification.

SOURCES OF OUTCOMES

This portion of the model seeks to identify the sources of goals/outcomes for the teacher (administrator, counselor, etc.) education program. From all available knowledge, "The Universe of Knowledge", selected the beliefs, values and experiences to be included in preparing teachers and other education personnel.

These thoughts lead to a selection of appropriate words, ideas and concepts, which are then translated into general outcomes and goals in order to prepare a written statement describing "The Well Prepared Beginning Teacher".

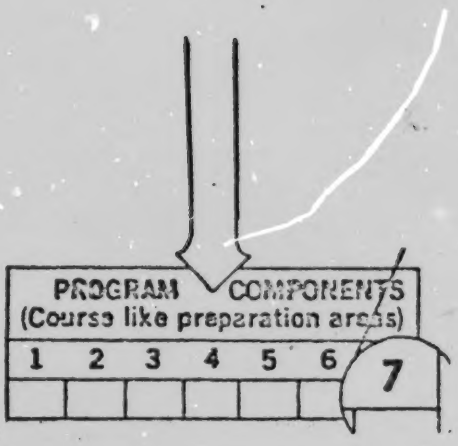


This is used again on page 46.

One may substitute any other educational personnel job description.

PROGRAM COMPONENTS

At this juncture the model requires a description of the current program for preparation of specified personnel. A current catalog listing the titles of each required and elective course represent this type of information. Each course should relate to some of the outcomes or goals as described in the previous part of the model, and the program as a whole should meet all the criteria implicit in the statement of "The Well Prepared Beginning Teacher", or other job title. If one perceives a lack of congruence between the statement of goals of the program components and the

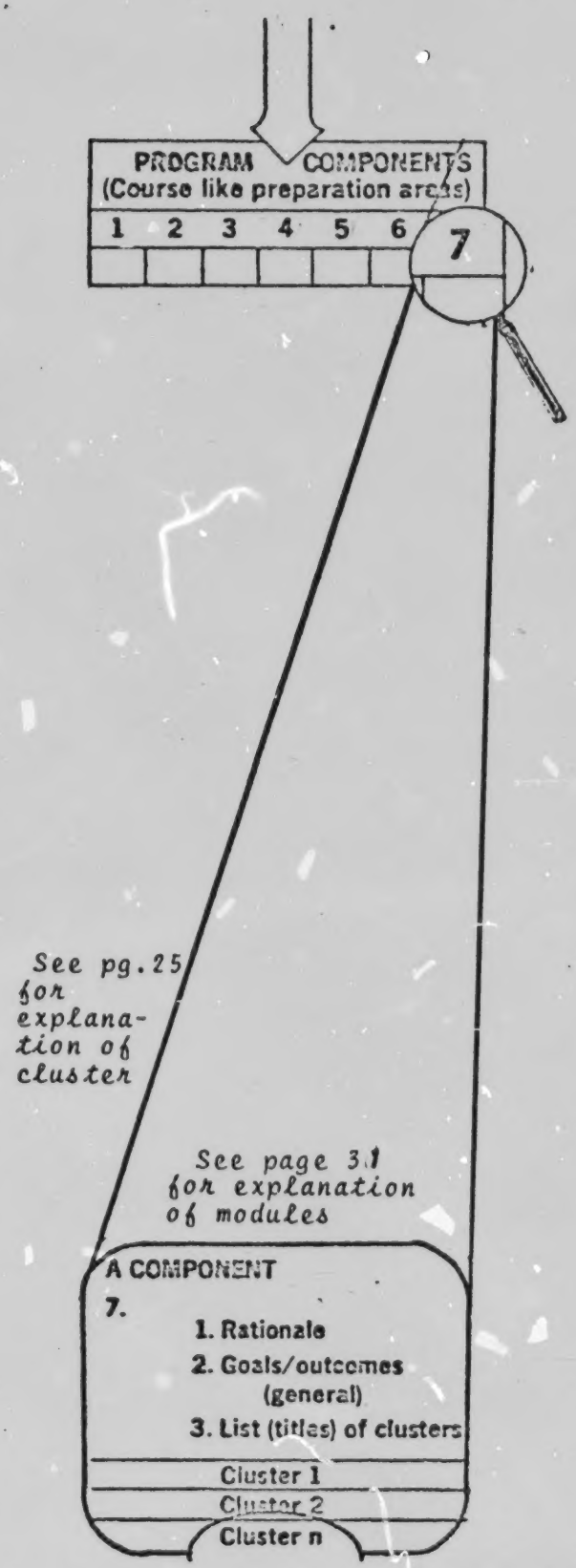


overall program goals,(eg. if a desired outcome or goal is not available through instruction in one of the courses), a re-evaluation of the program should be considered.

The magnifying glass around one of the components (courses) gives us an opportunity to look more closely at that component. The term component is preferred over course so as not limit development and planning to existing organization. Each component is made up of several parts, each of which requires several elements. That is, each component is made up of clusters, and each cluster is made up of modules.*

A COMPONENT AND ITS ELEMENTS

A component is a preparation area or "course". It contains a number of interrelated and inter-dependent

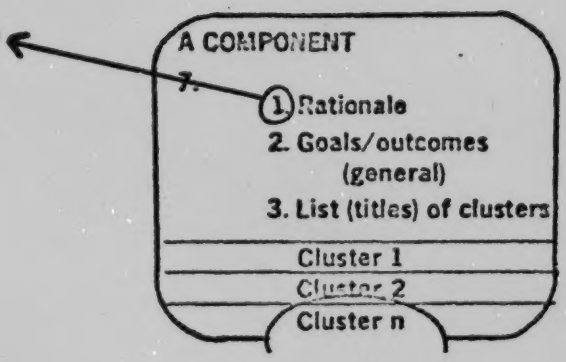


clusters which meet the stated goals/objectives of a preparation area.

EXAMPLE OF A COMPONENT TITLE

The Teaching of Reading for Secondary School Academic Subject Teachers

Component Element 1: Rationale



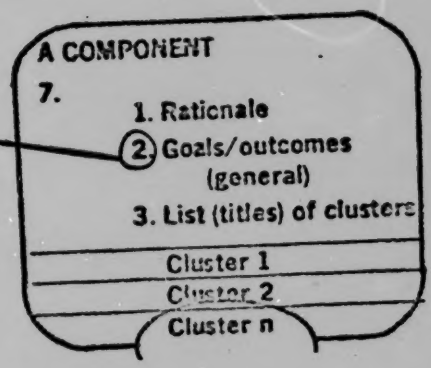
The rationale for the component is a cohesive, succinct statement which answers the question "Why is this component essential for the preparation of beginning teachers?"

EXAMPLE OF COMPONENT RATIONALE (all examples in this paper are from the component "The Teaching of Reading..."):

Far too many students reach secondary school with deficient skill in reading. This deficiency frustrates both students and teachers. Little, if any, help is available to remediate reading deficiencies in the secondary program.

Traditionally, secondary school teachers of academic subjects are not prepared to be teachers of reading as well as teachers of social

studies, math, science or English. This component will not prepare academic teachers to become reading specialists. It will, however, help academic teachers develop some essential skills in diagnosis, prescription and materials selection related to their teaching area, so that they may better help students develop reading and comprehension skills through subject area content.



Component Element 2: Goals/Outcomes

A general statement for the learner (hence, made public) which states the intended outcomes or goals of the component (course). Since these are general and comprehensive statements, they cannot readily be stated behaviorally.

EXAMPLE OF COMPONENT GOALS/OUTCOMES:

Each student preparing to become a secondary academic teacher will develop:

1. understanding and knowledge related to reading and related language,

2. skills in diagnosing reading dificiencies, prescribing remediation activities and applying

appropriate instructional techniques,

3. selection criteria for subject materials written at student's reading level,

4. through a series of structured experiences, positive attitude toward self as a teacher who is able to help students improve reading and comprehensive skills, and enjoy reading.

NOTE:

Below is a scale or continuum of specificity for writing outcomes, goals and objectives for competence-based instructional programs. As one moves from program goals/outcomes to module objectives, the statements change from general/comprehensive to discrete/specific (behavioral).

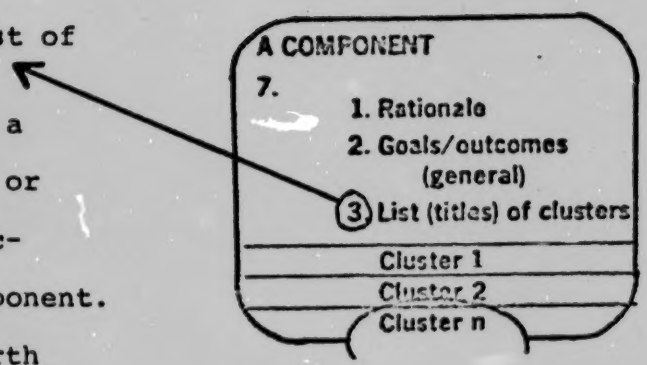
Continuum of Specificity for Statements of Objectives/ Outcomes

PROGRAM COMPONENT CLUSTER MODULE

Comprehensive (very general) — *Specific/ Discrete (behavioral)*

Component Element 3: List of Clusters

This element requires a simple listing of titles or major headings of instructional topics in the component. These titles are henceforth referred to as clusters.



EXAMPLE LIST OF (COMPONENT) CLUSTERS:

Component Titles: Teaching of Reading....

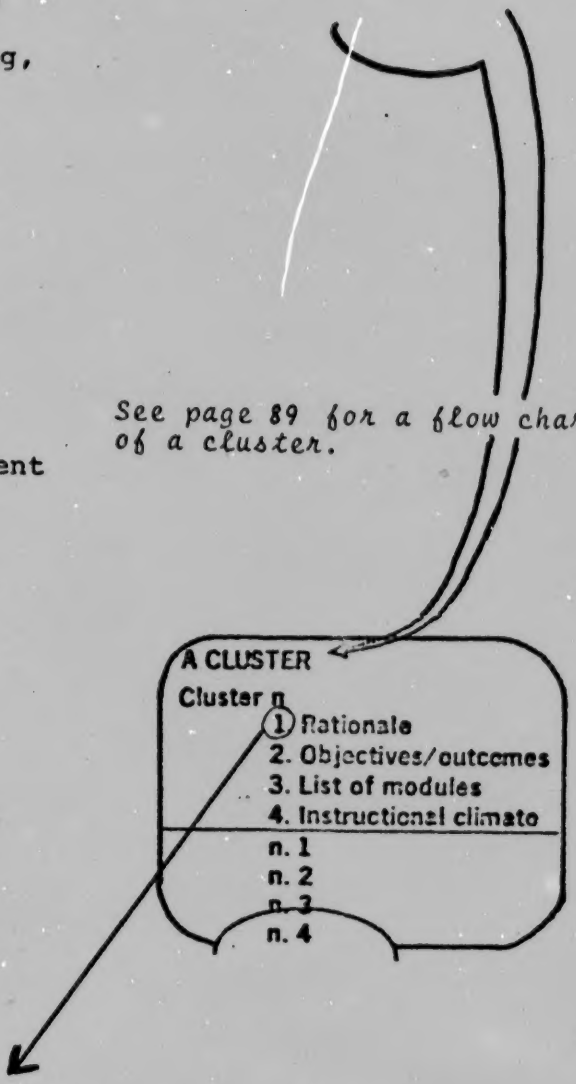
Cluster Titles (some samples):

1. Reading-Related Language Factors
2. Defining Types of Reading, and Reading
3. Determining Expectancy Levels
4. Diagnosis
5. Etc.
6. Flexibility of Reading Rate

A CLUSTER AND ITS ELEMENTS

A cluster is an instructional topic within a component or preparation area. It is composed of any number of inter-related and inter-dependent groupings of modules which, when put together with other clusters, meets the goals/intended outcomes and behaviors of the component.

See page 89 for a flow chart of a cluster.



Cluster Element 1: Rationale

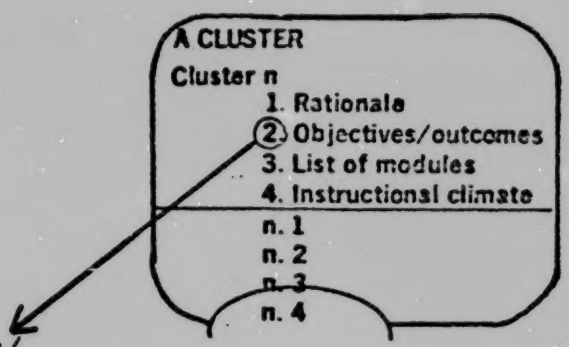
The rationale for each cluster is a cohesive succinct statement which answers the question "Why is this cluster essential for

The rationale is developed from the objective. See page 63.

the preparation of teachers (or any educational personnel) at entry level?" It justifies your selection of that topic/ instructional area for inclusion in the component and acts as a motivational statement for the learner.

EXAMPLE OF CLUSTER RATIONALE

Research shows that improving the reading rate improves comprehension and leads to a liking for reading, or at least a willingness to read. Therefore, developing techniques to help students improve their reading rate is beneficial to the students and ought to contribute to their comprehension of subject content.



Cluster Element 2: Objectives/ Outcomes

A statement of objectives or expected outcomes. This statement approaches specificity, and it is often possible to state these objectives behaviorally. Its intent is to inform the learner what is expected as a result

See pages 48 through 65. This is the most crucial portion of CBTE curriculum development.

of the time, energy and intellect expended during the instructional phase(s) of that cluster. The statement is often a summative outcome which calls for pulling together or orchestrating the more discrete behaviors or objectives ("repertoire of discrete competences") required within the cluster. Competence-based teacher education operates on the premise that the cluster objectives/outcomes are more than the sum of each module objective.

Simply performing the specified discrete acts bears little relationship to role of teachers. No competence-based teacher education program would be complete unless it required trainees to select appropriate skills, performances,

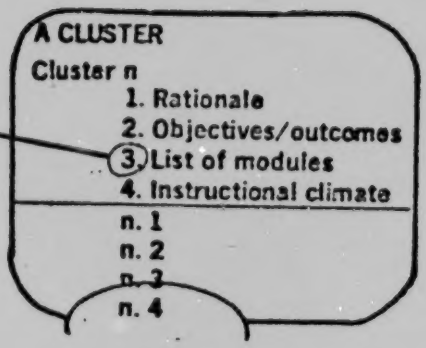
climates and resources based on knowledge of educational, psychological and sociological processes and theories, interacting with the personality, artistry and innovativeness of the trainee. This phase in a competence-based preparation program is referred to as the "orchestration phase."

This "orchestration phase" calls for the appropriate mix of the technology of the teaching act, a theoretical framework for selection of those acts and the artistry of the person making the selections for application in the teaching - learning process.

EXAMPLE OF CLUSTER OBJECTIVES/ OUTCOMES:

Given three pupils who read at grade level and utilizing materials related to their subject area specialties,

students will develop and demonstrate specific competencies to improve each pupil's reading rate and comprehension skills. These competencies shall include collecting and charting date, diagnosing, prescribing and teaching.



Cluster Element 3: List of Modules

After identifying the cluster objectives/outcomes, one needs to list the discrete areas of knowledge, or skills, or performance, or experiences by title or content. These discrete areas are referred to as modules within each cluster. All the items on the list of modules within a single cluster must be closely interrelated.

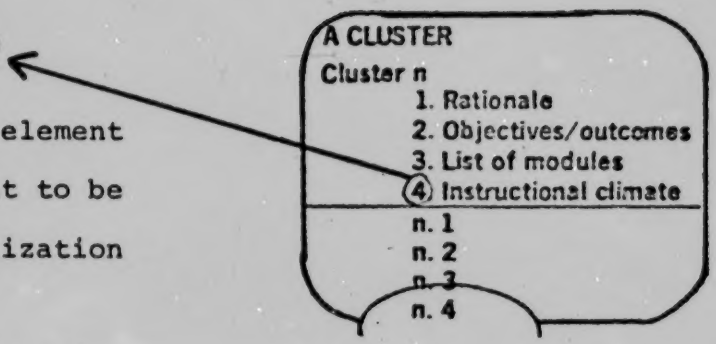
EXAMPLE OF CLUSTER'S LIST OF MODULES:

Cluster Title (6):
Flexibility of Reading Rate

Module Titles:
1. Defining Flexibility of Reading Rate
2. Collecting, Charting, Interpreting
3. Relating Accuracy to Rate

4. Varying Rate with Purpose
5. Diagnosing and Teaching Improvement of Rate

Cluster Element 4:
Instructional Climate



Inclusion of this element is optional, but ought to be considered. Its utilization is often helpful in identifying or specifying the "scene" where instruction and/or assessment is to take place. For example: a reading lab; microteaching; urban classroom; community agency; assignment of students; rules and regulations; resources; other management details.

EXAMPLE OF INSTRUCTIONAL CLIMATE:

The student will have access to a reading lab for some specified objectives and instructional activities of this cluster.

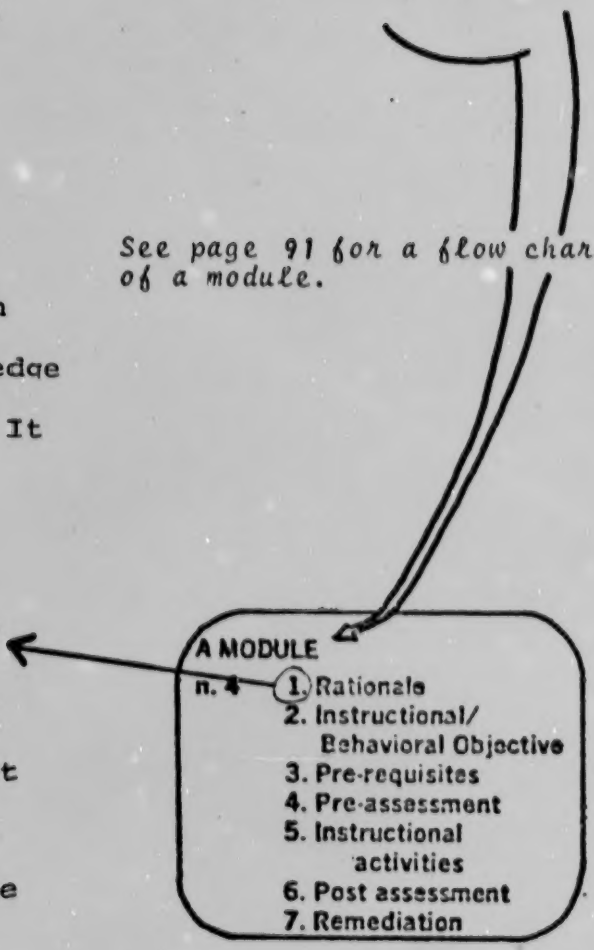
Remember, each COMPONENT is made up of any number of

(module) CLUSTER, and each (module) CLUSTER is composed any number of MODULES.

A MODULE AND ITS ELEMENTS

Finally, we consider the module. A module deals with a single performance, knowledge area, skill or experience. It may also contain multiple discrete objectives.

See page 91 for a flow chart of a module.



Module Element 1: Rationale

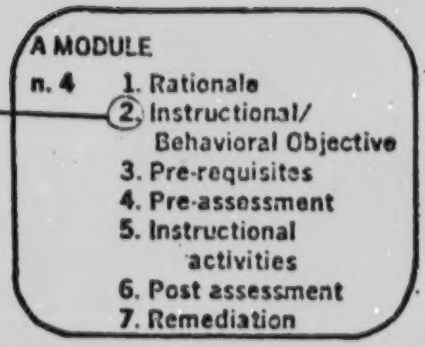
The rationale for each module is a cohesive succinct statement which answers the question, "Why is this module (objective) essential for the preparation of teachers (or other job title) at an entry level?", or "Why it is necessary in this cluster?"

Rationale developed on page 71.

EXAMPLE OF MODULE RATIONALE (for module 2):

In order to prescribe a program

for improving a pupil's reading rate, collection and interpretation of specific data is required. This data is for establishing base line rate and recording pupil progress.



Module Element 2: Instructional/Behavioral Objectives

Stating the module objective in terms which allow for measurement, observation, or recording requires a behaviorally stated objective. The learner must know precisely what knowledge, performance or experience is expected. In other words, the objective(s) must be made public to the learner and explicitly stated so that there is no question as to what is required.

Each objective calls for a demonstration of knowledge at any one or combination of items in the hierarchy of Bloom's Taxonomy, or a demonstration of a skill, or

Bloom, Benjamin Taxonomy of Educational Objectives, New York, David McKay Co.Inc., 1972.

performance, or participation in an experience.

EXAMPLE OF MODULE INSTRUCTIONAL/ BEHAVIORAL OBJECTIVE(S):

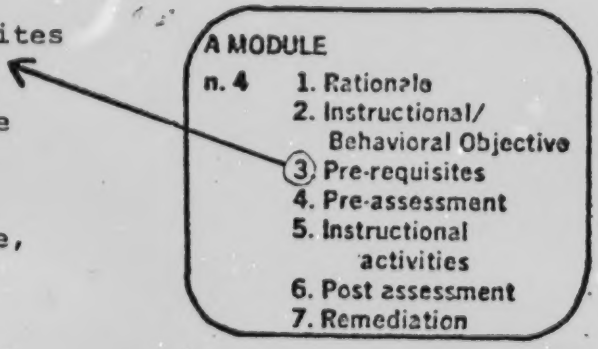
Given reading materials to assess pupil reading rate and comprehension and explicit directions on collecting, charting and interpreting the data, the student will select a secondary pupil, administer the assessment chart the data collected and interpret the data. The results are then submitted to the instructor for evaluation. Completion of this objective will be judged successful by the instructor if the data are accurately charted and the student's interpretation of the data is in substantial agreement with the instructor's.

Module objective developed on pages 66-71.

NOTE:

An experiential objective is our way of addressing the affective domain. The extreme difficulty of writing affective objectives causes us to structure many experiences for the learner which we believe will directly contribute to the development of beliefs, values and attitudes related to teaching. We do not specify what those beliefs, values or attitudes must be, so careful preparation and structuring of experiences is a must.

Module Element 3: Prerequisites



This element calls for the overt consideration of any unique prerequisite knowledge, skills or experience necessary for the learner to achieve the stated objective. Determining prerequisites may

require a task analysis. If no prere[illegible]tes of significance are [illegible]t, a statement should be i[illegible]d to that effect.

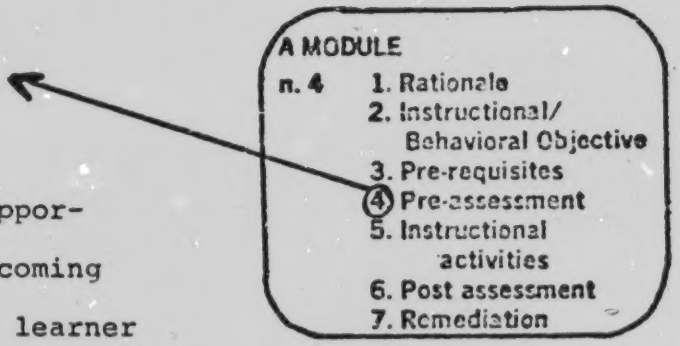
[illegible]iew of prerequisites may also lead to proper sequencing in the program. Consider questions such as: what clusters should come before others, and what modules should preceed others.

EXAMPLE OF MODULE PREREQUISITES

Successful completion of previous module (which requires student to list and define four different reading rates applicable to both functional and recreational reading).

Developed on pages 71-74.

Module Element 4: Pre-assessment or Pre-test



A pre-assessment or pre-test provides the opportunity to sample the incoming knowledge, etc., of the learner prior to instruction. If

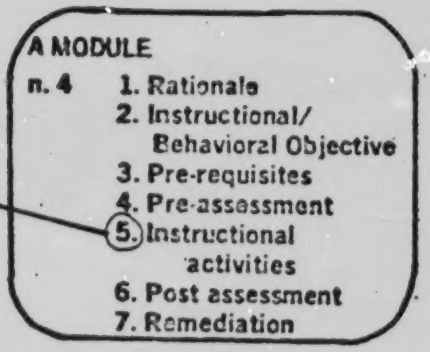
competence is demonstrated in the pre-assessment, the learner moves to the next objective. If not, an analysis of the pre-test by both learner and instructor assists the design of instruction and influences the learner's progress through instruction to meet the stated objective at the level of competence specified. If the objective is an experiential one, a pre-assessment may simply ask if the learner has had that experience recently. If so, the experience need not be repeated unless both learner and instructor agree that there is value in repetition.

EXAMPLE OF MODULE PRE-TEST:

If the student feels he can demonstrate the charting skills and accurately interpret the data, he may want to take the pre-assessment. The pre-assessment would consist of raw data

Assessments are developed on pages 75-80

which he would be required to accurately chart and interpret. The learner may elect not to try the pre-assessment if he feels he needs instruction prior to demonstrating "competence" in the objective.



Module Element 5: Instructional Activities

Though most programs begin and end with instructional activities, a CBTE program views instruction as a means whereby the learner prepares to demonstrate attainment of the ends or objectives of instruction. The means may vary, for the prime concern is the ends.

It is essential that each learning activity be constructed so that it leads directly to the attainment of of the stated objective(s).

Ideally, alternative means of instruction are provided, as well as a viable option to

the learner to design a personal learning experience to meet the objective. This allows the choice of an instructional activity closely related to the learner's own preferred learning style. It also provides a second (or third) alternative for remediation, if the first activity does not lead to the attainment of the stated objective.

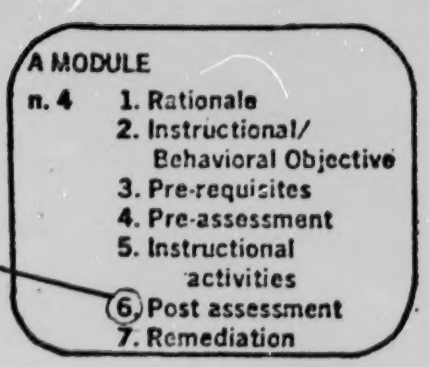
EXAMPLE OF INSTRUCTIONAL ACTIVITIES:

Do any one of the following:

Developed on pages 80-86

1. Read: Harris, A. J. and Sipay, Effective Teaching of Reading (second edition), New York: David McKay, 1971, pp. 321 ff. ("Relating Rate to Comprehension"):
2. (other appropriate readings may be cited)
3. Visit a reading lab and analyze workups on students from raw data to interpretation, then try some yourself and check outcome with files.
4. Attend a lecture on "Collecting, Recording and Interpreting Data on Reading Rate and Comprehension,"

Lecture Hall 2, November 20, 8:00 P.M.
5. View filmstrip and audio tape #16 (TOR)
6. Design your own learning experience.



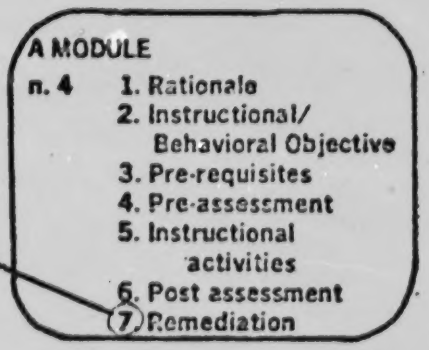
Module Element 6: Post-assessment or Post-test

A post-assessment is required (in some form to allow the learner to demonstrate attainment of the stated objective at the level specified, or according to the specified criteria for judgement of competence.

EXAMPLE OF POST-ASSESSMENT:

Submit to the instructor the raw data collected from your selected pupil, an accurate chart and an accurate interpretation of the data. The instructor will determine if the chart is accurate and the interpretation is valid.

See also: Pre-assessments, pages 34-36; and development of assessments, pages 75-83



Module Element 7: Remediation Procedure

Remediation is necessary for the learner if "competence" is not demonstrated in the post-assessment. The instructor's professional

judgement either "recycles" the learner, or begins an analysis of the instructional process to determine if the program (instruction) is at fault.

EXAMPLE OF REMEDIATION PROCEDURE:

If the student is unable to interpret accurately the data, though he elected to attend the lecture (#4 of the instructional activities), the instructor may suggest any one of the other activities as a remediation.

If many students elect the lecture and are unable to meet the objective, the contents of the lecture may be be questioned.

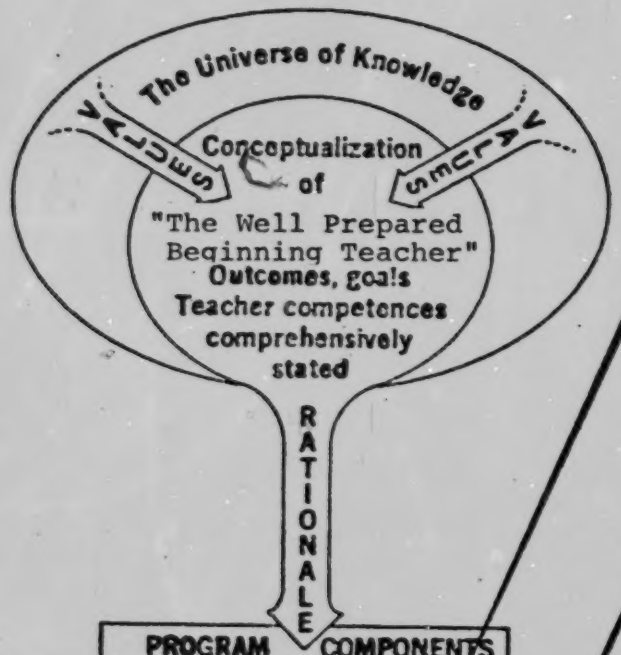
Development of procedures - pages 86-88

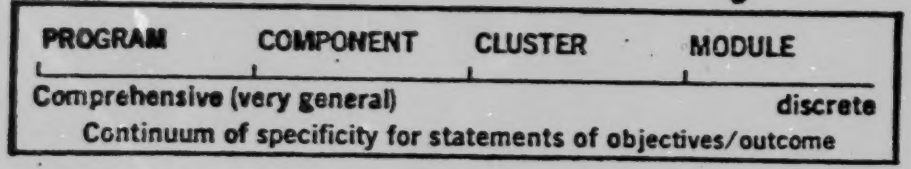
FINAL NOTE:

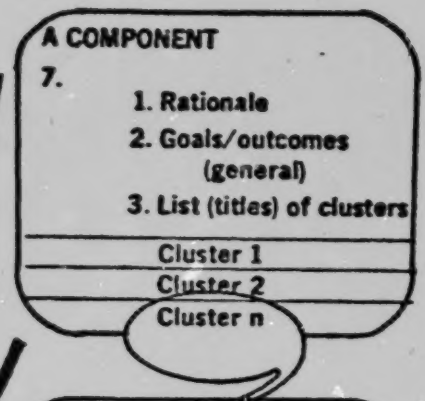
All the elements are described and explained here. There may be times when one or more element may be eliminated. But, this should be a conscious choice to eliminate rather than an omission coused by lack of consideration or lack of skill for including it.

On the next page is a schematic of the total model.

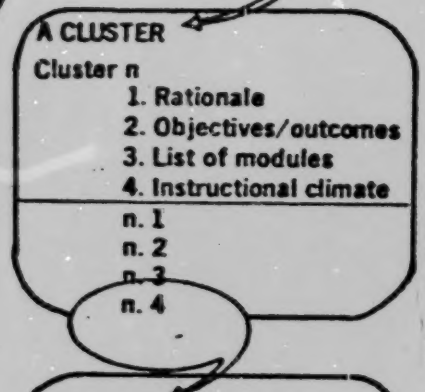
MODEL CURRICULUM STRUCTURE FOR A CBTE PROGRAM



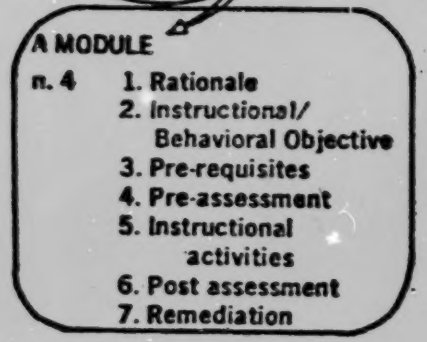




A component-a preparation area (or course). Composed of any number of inter-related and inter-dependent clusters which meet the stated goals/objectives of a preparation area.



A cluster-an instructional topic within a preparation area (or course). Composed of any number of inter-related and inter-dependent groupings of modules which, when put together with other clusters, meets the goals/intended outcomes and behaviors of the component.



A module-a single performance, knowledge area, skill or experience. It may also contain multiple discrete objectives.

Dan Ganeles
SUNYA
1974

DIRECTIONS FOR ASSEMBLY

INTRODUCTION

There are many conceivable approaches to the development of a competence-based teacher education program. For example one could, as was done at one college, close down for a year and write curriculum. One could look for all the competences that should be in a program as listed in the Florida catalog and then try to sort these out. One could try to generate a list of the competences which describe "the well-prepared beginning teacher" and then try to develop a program to meet that description. One could start with all the good texts now in use and try to distill one approach. Or, one can begin with the program now in

Norman R. Dodl - Director, The Florida Catalog of Teacher Competencies, Tallahassee: Florida Department of Education, Division of Elementary and Secondary Education, January 1973.

operation and, conserving all that is desirable and workable, rework it into the competence-based format.

Through our experience and our observation of others, we have found this "conservational" approach to be the most productive. The conservational approach avoids, as much as possible, the reinvention of the wheel. It is a systematic analysis and revision of the present program. Like any systems analysis approach it challenges what is now in existence but does not deny the possibility, even the likelihood, that what now exists is desirable.

Use of the conservational approach should do two things for a CBTE project. First, and in the long run most important, is the establish-

The conservational approach was defined (and rejected) by Lewis Sinatra and others at the State University College at Buffalo, New York.

Sinatra, Lewis J. Performance-Based Teacher Education -- It Can Be Transformational. Buffalo, New York: State University College at Buffalo, 1972.

ment of a working style among those responsible for the program. This working style includes such features as: a common format for organization of curriculum; public and explicit statements of all objectives, rationales, assessments and procedures; the boundaries of individual and collective responsibility and authority for the program; and the process for constant and continuing revisions.

The second, and more immediate need that the approach should be able to meet is the efficient production of a program and a proposal for that program which meets the current requirements. No matter how complete a program is, it will not be useful unless it is produced on time. No matter how rapidly a proposal is produced it will be

useless unless it is either complete or has built mechanisms for its completion.

This presentation of a developmental model is organized around the concept that there are definite stages in the development of a CBTE program. While there could well be discussions on how to divide the total problem into stages, the general principle seems useful. Our division of the problem yields seven stages of program development.

The developmental model presented here proceeds in a different order than the total descriptive model presented on pages 1-40. When development is complete, it will reflect your application of the descriptive model.

Stage I - Organization for Program Development

Stage II - Cluster objectives and rationale

Stage III - Module objectives

Stage IV - Rationale and prerequisites for each module

Stage V - Assessments for each cluster and each module

Stage VI - Learning activities

Stage VII - Procedures

Within each of stages II through VII there are basically four steps.

Step 1 - Identify, that is list, in a brainstorming manner, the elements to be considered.

Step 2 - Write out the objective(s), rationale(s), prerequisites, assessments, learning activities as called for in that stage.

Step 3 - Agree that the list and the written out form are internally consistent, adequate and acceptable.

Step 4 - Check for congruence with what was done before and resolve any cases of poor fit, either by rewriting what was done before or reworking what is now under consideration; then, move on to next stage.

Going through the four steps for any given stage is a time consuming business, particularly the first time a group does it. A rough schedule might allow for half-day working sessions for each stage with a day or two between working sessions.

The curriculum to be developed through the use of this version of the conservational approach should approximate the Model for a CBTE Curriculum described in the first section. In a sense, that is the blueprint and these are the directions.

STAGE I
Organizing to Develop Program

The conservational approach to CBTE program development begins with the establishment, by the governing body of a CBTE program, of working committees or task groups. The selected members of working committees should have knowledge of the present program in teacher education in a given certification area. They should be aware of the successes, failures, strengths and weaknesses of the present program. Persons selected for such a committee should also be aware of the past history of cooperation among the institutions and agencies involved.

See page 19 - Sources of Outcomes.

Factors which enter into the decision as to the number of committees, the size of their membership, and the scope given to each committee will depend

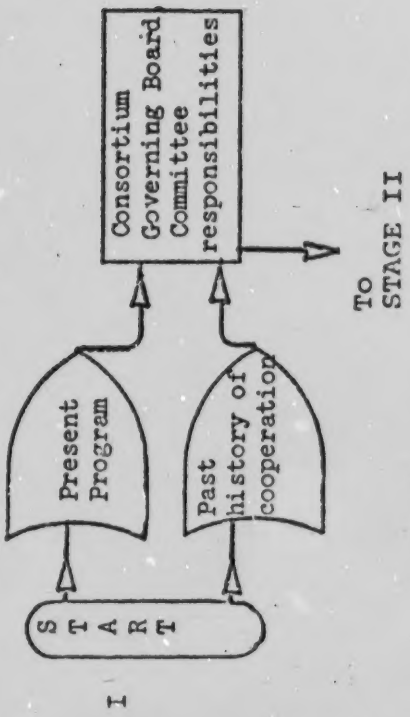
All the stages may be followed by any configuration of people, though the New York State mandate suggests, and we recommend, group representation.

largely on the resources and needs of the project. In general, a committee should be given a charge which is manageable - neither so large that the committee becomes frustrated by the magnitude of the task, or so small that they come to feel that it is trivial. A large committee with a broad charge may well consider informal smaller working groups. A good range of size for a working group is between three and eight people with a charge comparable to the development of a course or a short series of related courses.

In the terms of our model a working group should be charged with the systematic analysis, and statement of a component. A component as defined in the section describing the model, is a subdivision of a program not

Component defined on pages 20-24

unlike a course, designed to develop a group of related interdependent goals or general objectives. Some typical component titles might be: "Teaching of Reading" or "Educational Psychology" or "Language Arts" or "General Methods."



Summary of Stage I

At the end of Stage I the work committee has been given its charge and is organized to begin program development.

STAGE II
Cluster Objectives and Rationale
Step 1

The first step in Stage II serves to further define the working group's responsibility through the identification of the titles of the clusters within the component assigned to that working group. A cluster is an instructional topic within a component.

Clusters are defined on pages 25-30.

It is composed of any number of interrelated and interdependent groupings of modules which, when put together with other clusters, meets the goals/intended outcomes and behaviors of the component. This first step is basically a brainstorming phase. What are the cluster titles, the major topics, which should be included under this component? For example, a component might be designated EDUCATIONAL PSYCHOLOGY. The clusters which might be identified could include: Introduction, Learning Theory, Evaluation, Tests and Measurements, Statistics, Motivation, etc.

Modules defined on pages 31-39.

STAGE II
Step 2

The second step in Stage II, Cluster Objectives and Rationale, is to write out objectives for each cluster.

The cluster is singled out as the place to begin as it may well be impossible to assess, with a single procedure, a student's success in meeting the goals of a program or even a component. The success of the component in meeting student needs or the success of the program in meeting the needs of the field will have to be evaluated, but assessment of student success in meeting the objectives of the program will in most cases be done on the module and cluster level.

In order to assess student success in meeting an objective, the objective needs to be carefully stated to answer the questions: Who; is to do what; with what resources; to what extent? Cluster objectives differ from program or component goals in that cluster objectives should be

designed so that they can be met by a student. Program and component goals are not evaluated for each student, but for the component and program as a whole. Cluster objectives differ from modular objectives in that cluster objectives require the orchestration of a number of discrete modular objectives. Cluster objectives are often summative, that is they are assessed as the final product of the interaction of the modular objectives. Modular objectives are usually formative. They are steps along the way toward summative objectives.

Cluster objectives and the orchestration phase are discussed on pages 26-28.

There is a mnemonic for checking the completeness of a behavioral objective.

A is for ACTOR, a specification of the individual or the group for whom the objective

is intended. Such specification demonstrates knowledge of the learner and the learner's characteristics. Consideration of the "Actor" forces the writer to be overtly aware of the learners for whom the objective is intended, and the learners' specific characteristics. It leads eventually to a consideration of prerequisites. ACTOR answers the question "Who?"

Examples: "students in primary art class," "interns in teacher education programs," "social studies majors," "adults in science portion of GED preparation," "students who have completed two hours of classroom observation."

B is for BEHAVIOR, the intended outcome of instruction, so stated as to make assessment possible by measuring or observing or recording. BEHAVIOR answers the question "...is to do what?"

Examples:
"...will write a critique..."
"...will select books..."
"...will participate in a discussion..."
"...will produce a transparency..."

C is for CONDITION, specification of that which will be provided to make it possible for the learner to demonstrate or achieve the expected

Examples: Given a handout entitled _____; or Given a group of 6th graders who read at the 4th grade level; or using the materials in the AV lab.

objective. These may include: material resources; time; money; space; etc. Condition statements often begin with "given." CONDITION answers the question "...with what resources?"

D is for DEGREE. "Degree" includes items which specify how often; with what minimal accuracy; over how long a period of time; according to what criterion. DEGREE answers the question "...to what extent?"

Examples: ...with eighty percent accuracy...four times in the eight weeks of clinic teaching...to the satisfaction of the learner and the instructor...in the opinion of class... to the degree established by the student, the cooperating teacher and the college supervisor...

Not every item in the mnemonic needs to be repeated in every statement of every objective. The "A" item, knowledge of the learner, may well be covered in general terms by the mere fact that the learner is in the program or registered for the course. This does not mean it can be ignored. There may be

specifics which cannot be taken for granted. The "B" item, an observable action, is absolutely necessary in every objective. The "C" item, conditions, unless they are unusual, can often be stated in the component or cluster and left tacit in the modules. The "D" item is necessary so that the learner always knows what criterion is ascribed to competency, or no assessment would be fair, but it may be included in the assessment or in both the objective and the assessment.

Program goals are more than the simple sum of component goals. Program goals are the product of the interplay of the component goals. The same relation exists between component goals and cluster objectives as between cluster objectives and module objectives. For example, a cluster objective might be:

"The student in the permanent certification program who has completed the objectives of the modules in this cluster will write a critique of a selected textbook series. Criteria for success will be agreed upon by the learner and instructor and will include: analysis of the learning theory or theories upon which the design of that series rests, its internal consistency, its relationship to current practice."

Though the pioneering work by Bloom and Krathwohl and others seem to offer a convenient format for analyzing, classifying and preparing program component cluster or module objectives for CBTE programs, we find it disfunctional and therefore impractical.

It is not relevant to consider whether a specific objective

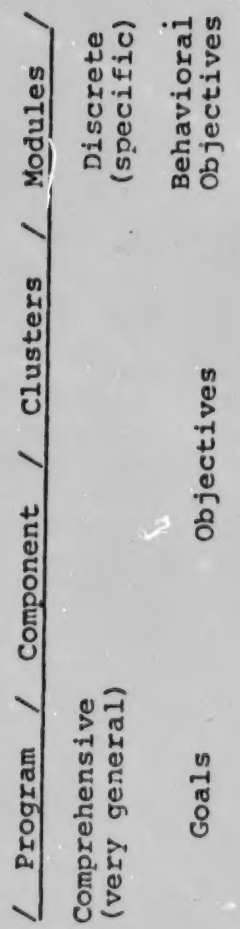


TABLE I. Major Categories in the Cognitive Domain o the Taxonomy of Educational Objectives (Bloom, 1956,

Descriptions of the Major Categories in the Cognitive Domain
1. **Knowledge.** Knowledge is defined as the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.
2. **Comprehension.** Comprehension is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.
3. **Application.** Application refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.
4. **Analysis.** Analysis refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material.
5. **Synthesis.** Synthesis refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of *new* patterns or structures.
6. **Evaluation.** Evaluation is concerned with the ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all of the other categories, plus conscious value judgments based on clearly defined criteria.

Examples of General Instructional Objectives and Behavioral Terms for the Cognitive Domain of the Taxonomy

Illustrative General Instructional Objectives	*Illustrative Behavioral Terms for Stating Specific Learning Outcomes*
Knows common terms Knows specific facts Knows methods and procedures Knows basic concepts Knows principles	Defines, describes, identifies, labels, lists, matches, names, outlines, reproduces, selects, states
Understands facts and principles Interprets verbal material Interprets charts and graphs Translates verbal material to mathematical formulas Estimates future consequences implied in data Justifies methods and procedures	Converts, defends, distinguishes, estimates, explains, extends, generalizes, gives examples, infers, paraphrases, predicts, rewrites, summarizes
Applies concepts and principles to new situations Applies laws and theories to practical situations Solves mathematical problems Constructs charts and graphs Demonstrates correct usage of a method or procedure	Changes, computes, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses
Recognizes unstated assumptions Recognizes logical fallacies in reasoning Distinguishes between facts and inferences Evaluates the relevancy of data Analyzes the organizational structure of a work (art, music, writing)	Breaks down, diagrams, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, points out, relates, selects, separates, subdivides.
Writes a well organized theme Gives a well organized speech Writes a creative short story (or poem, or music) Proposes a plan for an experiment Integrates learning from different areas into a plan for solving a problem Formulates a new scheme for classifying objects (or events, or ideas)	Categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes
Judges the logical consistency of written material Judges the adequacy with which conclusions are supported by data Judges the value of a work (art, music, writing) by use of internal criteria Judges the value of a work (art, music, writing) by use of external standards of excellence	Appraises, compares, concludes, contrasts, criticizes, describes, discriminates, explains, justifies, interprets, relates, summarizes, supports

From: STATING BEHAVIORAL OBJECTIVES FOR CLASSROOM INSTRUCTION

TABLE II Major Categories in the Affective Domain of the Taxonomy of Educational Objectives (Krathwohl, 1964)

Descriptions of the Major Categories in the Affective Domain	*Illustrative General Instructional Objectives*	*Illustrative Behavioral Terms for Stating Specific Learning Outcomes*
1. **Receiving.** Receiving refers to the student's willingness to attend to particular phenomena or stimuli (classroom activities, textbook, music, etc.). From a teaching standpoint, it is concerned with getting, holding, and directing the student's attention. Learning outcomes in this area range from the simple awareness that a thing exists to selective attention on the part of the learner. Receiving represents the lowest level of learning outcomes in the affective domain.	Listens attentively Shows awareness of the importance of learning Shows sensitivity to human needs and social problems Accepts differences of race and culture Attends closely to the classroom activities	Asks, chooses, describes, follows, gives, holds, identifies, locates, names, points to, selects, sits erect, replies, uses
2. **Responding.** Responding refers to active participation on the part of the student. At this level he not only attends to a particular phenomenon but also reacts to it in some way. Learning outcomes in this area may emphasize acquiescence in responding (reads assigned material), willingness to respond (voluntarily reads beyond assignment), or satisfaction in responding (reads for pleasure or enjoyment). The higher levels of this category include those instructional objectives that are commonly classified under "interests"; that is, those that stress the seeking out and enjoyment of particular activities.	Completes assigned homework Obeys school rules Participates in class discussion Completes laboratory work Volunteers for special tasks Shows interest in subject Enjoys helping others	Answers, assists, complies, conforms, discusses, greets, helps, labels, performs, practices, presents, reads, recites, reports, selects, tells, writes
3. **Valuing.** Valuing is concerned with the worth or value a student attaches to a particular object, phenomenon, or behavior. This ranges in degree from the more simple acceptance of a value (desires to improve group skills) to the more complex level of commitment (assumes responsibility for the effective functioning of the group). Valuing is based on the internalization of a set of specified values, but clues to these values are expressed in the student's overt behavior. Learning outcomes in this area are concerned with behavior that is consistent and stable enough to make the value clearly identifiable. Instructional objectives that are commonly classified under "attitudes" and "appreciation" would fall into this category.	Demonstrates belief in the democratic process Appreciates good literature (art or music) Appreciates the role of science (or other subjects) in everyday life Shows concern for the welfare of others Demonstrates problem-solving attitude Demonstrates commitment to social improvement	Completes, describes, differentiates, explains, follows, forms, initiates, invites, joins, justifies, proposes, reads, reports, selects, shares, studies, works
4. **Organization.** Organization is concerned with bringing together different values, resolving conflicts between them, and beginning the building of an internally consistent value system. Thus the emphasis is on comparing, relating, and synthesizing values. Learning outcomes may be concerned with the conceptualization of a value (recognizes the responsibility of each individual for improving human relations) or with the organization of a value system (develops a vocational plan that satisfies his need for both economic security and social service). Instructional objectives relating to the development of a philosophy of life would fall into this category.	Recognizes the need for balance between freedom and responsibility in a democracy Recognizes the role of systematic planning in solving problems Accepts responsibility for his own behavior Understands and accepts his own strengths and limitations Formulates a life plan in harmony with his abilities, interests, and beliefs	Adheres, alters, arranges, combines, compares, completes, defends, explains, generalizes, integrates, modifies, orders, prepares, relates, synthesizes
5. **Characterization by a Value or Value Complex.** At this level of the affective domain, the individual has a value system that has controlled his behavior for a sufficiently long time for him to have developed a characteristic "life style." Thus the behavior is pervasive, consistent, and predictable. Learning outcomes at this level cover a broad range of activities, but the major emphasis is on the fact that the behavior is typical or characteristic of the student. Instructional objectives that are concerned with the student's general patterns of adjustment (personal, social, emotional) would be appropriate here.	Displays safety consciousness Demonstrates self-reliance in working independently Practices cooperation in group activities Uses objective approach in problem solving Demonstrates industry, punctuality and self-discipline Maintains good health habits	Acts, discriminates, displays, influences, listens, modifies, performs, practices, proposes, qualifies, questions, revises, serves, solves, uses, verifies

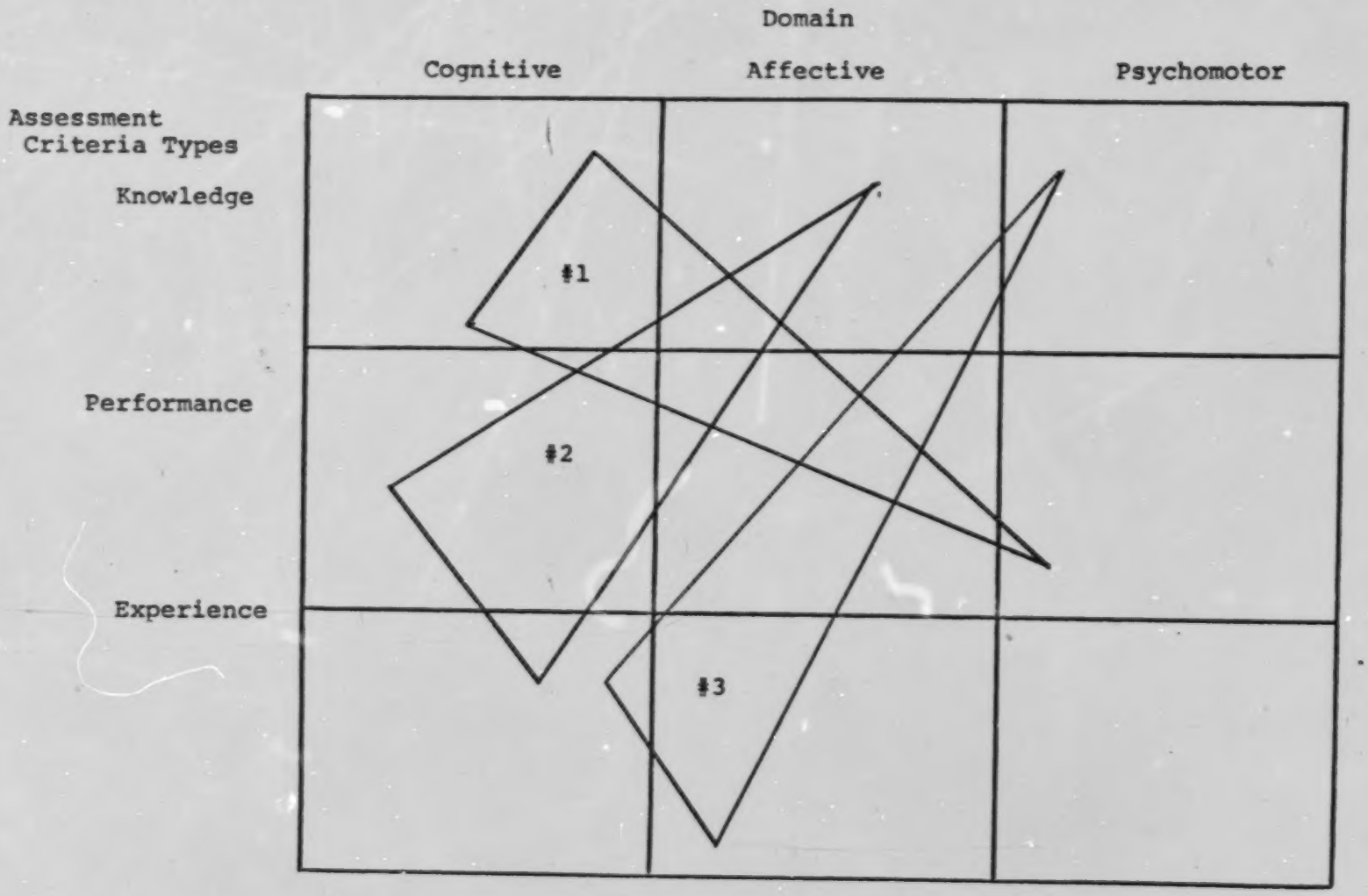
. Examples of General Instructional Objectives and Behavioral Terms for the Affective Domain of the Taxonomy

falls into a given domain during the preparation phase of a program which is based upon an existing curriculum. During later analysis the domains may be employed. However, it is extremely difficult if not impossible, to state an objective which falls into a single domain; for example to describe a psycho-motor proformance that does not demand knowledge and which does not have some affective impact. Swimming is a skill, but among other things, how one swims depends upon how one feels about water, total immersion and chlorine in the eyes. A good swimmer has considerable knowledge of buoyancy, hyperventilation, and relationship of temperature to distance of atomic planes in water.

The same case can be made for cognitive objectives. Cognitions can only be manifested through using some psycho-motor skill such as reading, writing, using a lathe or soldering a wire. The affective implication of each of these should be clear.

Objectives in the affective domain too, can only be manifested through some psych-motor skill and usually involves some real or assumed knowledge. Think of snales and you will experience some sort of affect. The chart on page 60 shows this visually. Rather that categorize objectives by domain indicated by the columns, we suggest if you feel the need for such a categorization, they be categorized by the primary means by which domonstration of the competence is to be assessed, indicated by the rows.

CATEGORIZING MODULES



For example, the objective labeled #1 on the chart on page 60, falls primarily into the knowledge area. It is to be assessed by some demonstration of knowledge, often performance on a pencil and paper test. As shown by the diagram of the #1, the objective also contains elements of the affective and psycho-motor domains, though they are not the prime concern of this particular assessment.

The objective labeled #2 falls primarily into the performance area. It is to be assessed by requiring the learner to perform some act or combination of teaching skills - to demonstrate the application of knowledge by doing. Obviously, in such an assessment of performance, elements of the three domains are inherent and utilized in a successful demonstration of performance.

Finally, the objective labeled #3 on page 60 will require the learner to become involved in a well planned experience. The primary purpose of this experience is to develop some attitudes, beliefs and/or values related to the experience. Assessment can only be in terms of recording when, where, how often, or how long. Even though the objective is to have an experience, which is primarily affective in nature, elements of both the cognitive and psycho-motor domains will be in evidence.

Organizing objectives by types of assessments that will be required, rather than the domains, permits a more functional, less controversial categorizing system. These categories may also help us to analyze and conceptualize

"the well prepared beginning teacher" in terms of (1) what knowledge must the beginning teacher have, (2) what kind of experiences must the beginning teacher have had, and (3) what must the beginning teacher be able to do (performance), based on knowledge and experiences.

See pages 19 through 21, Sources of Outcomes and Program Components.

STEP TWO, The Writing Out of Objectives and Rationale within STAGE II, The Development of Cluster Objectives and Rationale, continues with drafting and discussion of a rationale for each cluster objective. This should be a statement as to why this particular objective is a valuable portion of the total component's goals.

See page 25.

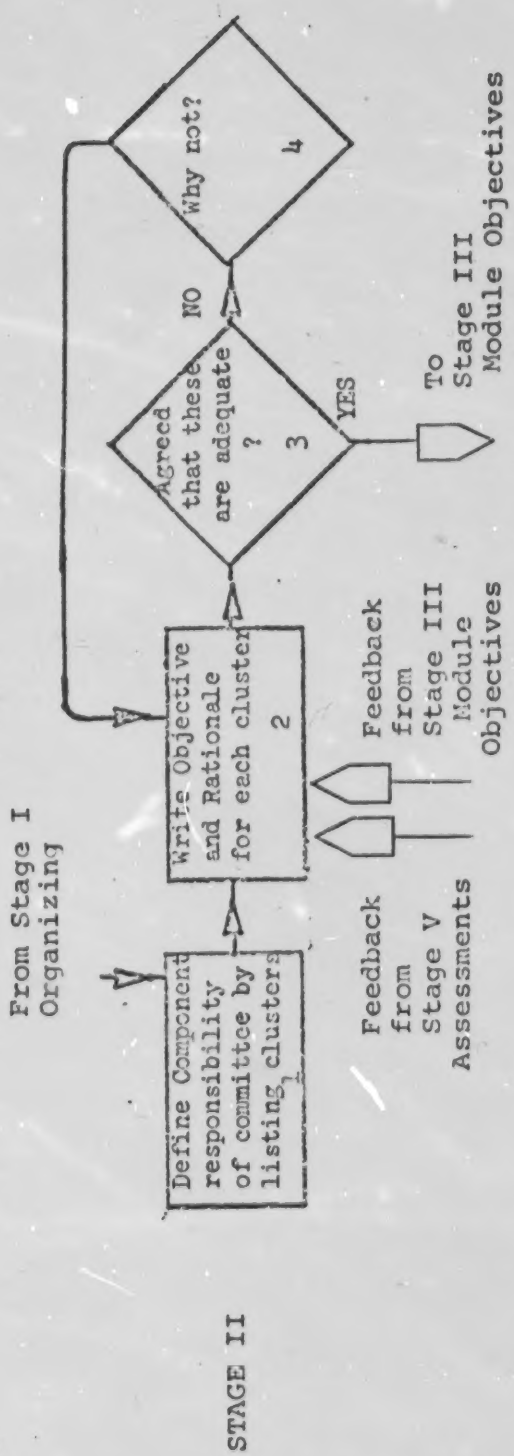
STAGE II
Step 3

Step 1 was to identify the clusters by title. Step 2 was to write out objectives and rationale for each cluster objective. Step 3 is to review this body of work and see if it has internal consistency, is adequate, and serves as a basis for continuing program development. Another check on appropriateness of cluster objectives occurs in Stage 3 as modules are identified and their objectives are written in Stage III. Similarly, as assessments are identified and written in Stage V there will be feedback to Stage II. The objectives of the modules will have to be coordinated with those of the clusters. Module objectives should prepare one for and build logically toward cluster objectives. If the assessments assess something other than what

the objectives make explicit as outcomes, the objectives or the assessments need revision.

STAGE II
Step 4

If the Curriculum Committee is not satisfied with what it has done to date, it cannot go on. The committee must take Sept 4 in Stage II and find out why it is not comfortable and what can be done about it. Step 4 requires that the committee go back and rewrite that which is inconsistent.


From Stage I Organizing
Define Component responsibility of committee by listing clusters 1
Write Objective and Rationale for each cluster 2
Agreed that these are adequate ? 3
Why not? 4
NO
YES
Feedback from Stage V Assessments
Feedback from Stage III Module Objectives
To Stage III Module Objectives
STAGE II

Summary of Stage II

At the end of Stage II the committee will have defined its responsibility by listing the clusters in a component they are charged with developing. They will also have written out the objectives and rationales for the clusters within a compo-

nent. Finally, they will have established a working relationship within the group which requires that there be group agreement before moving on to the next stage.

STAGE III
Module Objectives
Step 1

Select one cluster identified in Stage III, identify and list by title and subject the modules which should be included in that cluster. Brainstorming is a good group technique for accomplishing this step.

See page 29, Cluster Element 3.

A module is built around a single, discrete knowledge, skill or experience which, when clustered with other modules, builds towards the more complex cluster objective. The modules listed under a cluster should

Module defined on pages 31-39.

include all the discrete knowledge, skills or experiences needed to achieve the cluster objective and should exclude other knowledge, skills or experiences not relevant. If, as it develops, there are things which are desirable but do not fit under that cluster, they should be set aside and eventually included in other clusters or even other components.

STAGE III
Step 2

For Step 2, Stage III, The Development of Module Objectives, write out the behavioral objective for each module listed, by title in the first or brainstorming step described above. Careful attention should be paid to the inclusion of all the ABCD Mnemonic in each module's

Module objectives defined on page 32.

behavioral objective, or somewhere in each cluster. The writing of all the behavioral objectives for the modules in a cluster might well take much time - don't hurry it.

Once all the behavioral objectives have been written for all the modules identified in a cluster, the group can go on to Step 3, the review of the objectives of the cluster and the modules to see if they fit.

STAGE III
Step 3

Step 3, Stage III, The Development of Module Objectives. Review and correlate all the objectives for this cluster of modules. The separate modules need to be examined as they

relate to the cluster objective. Will successful completion of the module objectives prepare students adequately to meet the cluster objectives? Are the style and reasoning for these objectives consistent? If the answers to these, and other questions which may arise is "yes," then the group can go on to Stage IV. If not, then the group needs to go to Step 4 in Stage III to determine whether the module or the cluster objectives need to be revised.

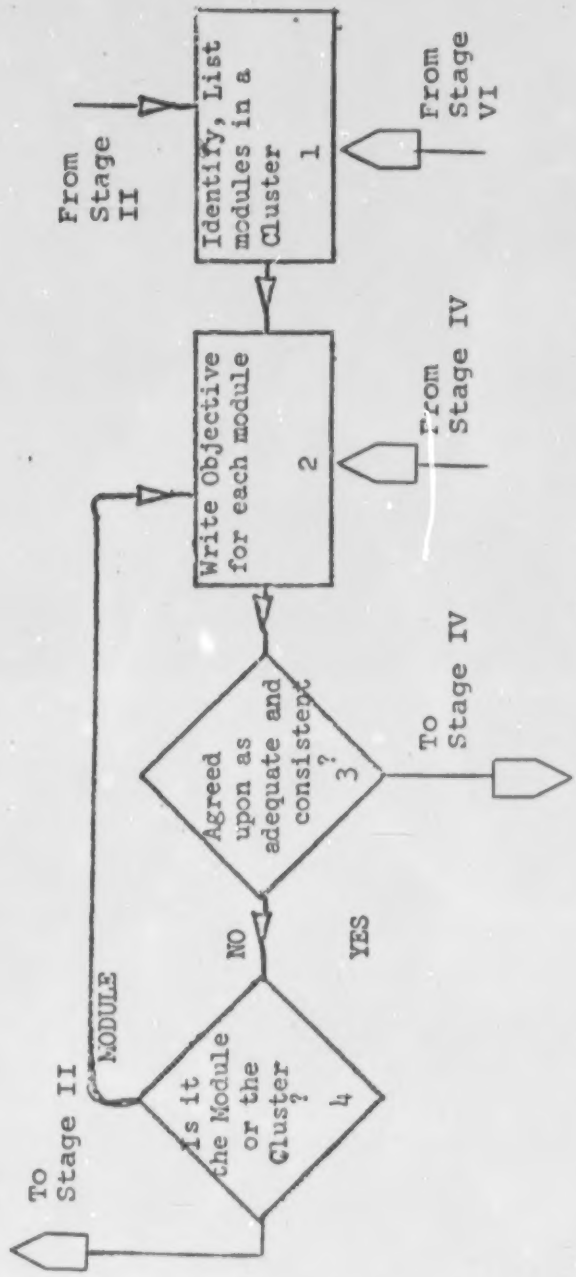
STAGE III
Step 4

Step 4, Stage III - If answers to the questions raised in Step 3 were "no," determine whether the group is uncomfortable with what they have done because the module objectives, as written, are inadequate or

because in the process of writing out the module objectives the group's perspectives of the cluster have changed. The writing of the module objectives tends to define and elaborate upon the original concept of the cluster. It is often the case that when the module objectives have been completed, the cluster objective needs to be rewritten. If Step 4 results in a decision that the module objectives need to be reworked because they either fail to include preparation necessary to meet the cluster objective, or they fail to exclude material extraneous to that cluster, then the group will have to go back and rework the module objectives. If Step 4 results in a decision that the cluster has now been redefined, then the group will have to go back and rework the cluster objective.

Summary of Stage III

At the end of Stage III the group had a list of clusters, the objective and rationale for the cluster currently under consideration, a list of modules in that cluster and the behavioral objectives for those modules. Furthermore, these will have been examined and coordinated. Each module now needs a rationale and a consideration of the prerequisites for that module. These are paired for convenience and as a further check on the appropriateness of clustering these modules.


From Stage II
Identify, List modules in a Cluster 1
From Stage VI
Write Objective for each module 2
From Stage IV
Agreed upon as adequate and consistent ? 3
To Stage IV
NO
YES
Is it the Module or the Cluster ? 4
MODULE
To Stage II

STAGE IV
Module Rationales and Prerequisites
Step 1

STEP 1, STAGE IV. List the reasons for studying this material at this point in a program and the skills or other

Module rationale defined on page 31.

prerequisite experiences a student would need before beginning work on these particular clusters or module objectives.

Module prerequisites defined on pages 33-34.

STAGE IV
Step 2

Write out the reasons for studying this material at this part in development specifying the antecedent skills. This becomes the site statements for a module. A rationale is included so that the thinking of the working group which prepared the material is made public. It is also included to give the eventual instructor some suggestions for motivating students. The public and explicit statement of rationale and prerequisites can also help students to make informed decisions about their own plans for completing their program. The writing out of prerequisites is not done with the intent of establishing

bureaucratic regulations, but to give an indication of sequence of presentation and a chance to review the logic of the organization of the program.

STAGE IV
Step 3

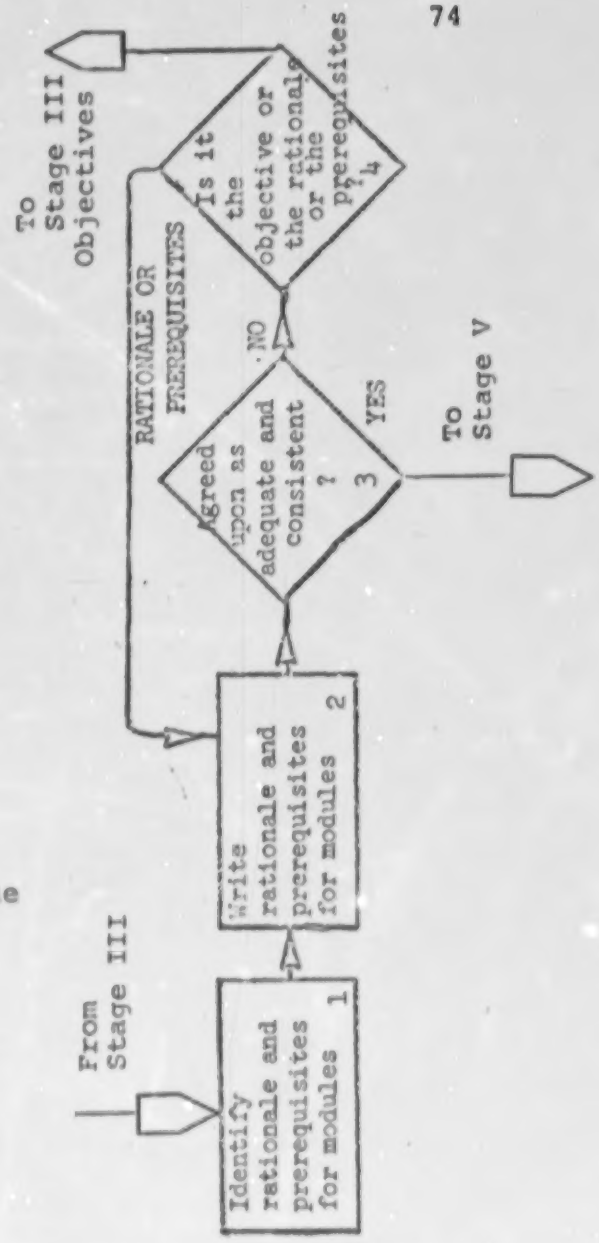
Decide whether rationale and prerequisites are in fact rational and appropriate. If they are, the group should go on to Stage V. If they are not, the group should use Step 4 to determine whether the rationale or prerequisites need to be reconsidered, or whether the elaboration of the objectives through the writing out of the rationale and prerequisites has uncovered weaknesses in the objectives.

Summary of Stage IV

At the end of Step 4, the committee will have in hand: a definition of the component they

are developing in terms of the cluster titles within the component: the objectives of the clusters; a list of modules within each cluster; the behavioral objectives for each module; and the rationales and prerequisites for each cluster and each module.

In addition, the relationship between the objectives of the modules and those of the clusters will have been established and any dissonance between the objectives, rationale and prerequisites will have been resolved.


From Stage III
Identify rationale and prerequisites for modules 1
Write rationale and prerequisites for modules 2
Agreed upon as adequate and consistent ? 3
NO
YES
Is it the objective or the rationale or the prerequisites ? 4
RATIONALE OR PREREQUISITES
To Stage III Objectives
To Stage V

STAGE V
Assessments

The writing of assessments on both the cluster level and the module level occurs in Stage V. The development of assessments in Stage V is most important because it tests whether the

Pre-assessment defined on page 34.
Post-assessment defined on page 38.

program can in fact assure itself, its instructors and students that the objectives can be reached.

STAGE V
Step I

List all the types of assessments that need to be prepared for the cluster from an examination of the cluster and module objectives. A cluster level assessment requires synthesis of the objectives of the modules often combined into a higher order demonstration of knowledge and performance skills. These may also include assessments, formal or informal, of all students' achievements of the discrete module objectives or a reasoned selection from the discrete objectives.

STAGE V
Step 2

Write out sample assessments for the cluster and for its modules. In many cases only the form or style may need to be indicated. The statement that assessment of this module will be made by means of a paper and pencil multiple choice test of facts may be adequate without writing out all the questions. In other cases it may be necessary to be more specific, identifying an observational instrument or a procedure. Some forms of assessment which should be considered might be:

1. Paper and pencil test of lower level cognition, knowledge, comprehension and application, which can be marked on a right-wrong basis might be appropriate for some modules.

2. Essays or other presentations of higher order cognition, the analysis, synthesis or evaluation of a body of knowledge, which tests need to be graded in a more complex matter including the judgement

of knowledgeable people might be used for some clusters.

3. Check lists of experiences might be the right assessment for the initial modules used to introduce a problem or initiate the development of some attitudes.

4. Some modules or clusters may require the application of paper and pencil tests or group process exercises designed to describe and help in the expression and examination of attitudes which have been developed.

5. Self evaluation based on prestablished criteria, either highly structured and reported, or informal and private may be appropriate to some modules.

6. Peer group evaluation may be appropriate for certain objectives which are hard to qualify.

7. The judgement of recognized professionals may be the only feasible assessment technique.

8. An observational instrument may need to be developed or adopted to give structure to the assessment of an objective which aims at the performance of a skill.

9. A micro-teaching or other simulation device may need to be developed to allow the demonstration of certain skills.

Many other forms of assessment can be conceived. In step

3 propriety of using a particular form of assessment will depend on the answers to the following questions.

1. Does the assessment assess the attainment of the stated objective? Is something required in the assessment which is not stated in the objective? Does the assessment at least sample all that is stated in the objective?

2. Who established the criteria to be used, the instructor, students, a committee, some outside group? Is the consortium satisfied that the process for establishment of the criteria is appropriate?

3. Will a normative reference system be used where the standard by which student achievement is judged is established in comparison to other students? If so, what data base will be used?

4. Will a criteria referenced standard be used whereby achievement is judged only in reference to the requirements of the job description of the certification area in question?

5. Will an objective be assessed at only one point in time, or will a student have to demonstrate competence in terms of an objective at several points in time? Will a student have to demonstrate competences on demand at any time?

6. Will successful demonstration of competence include

applying selection criteria to justify practice through theory? Will students simply be required to demonstrate performance and knowledge separately?

STAGE V
Step 3

When the committee has answered and reached agreement on the questions in step 3, it will either go on to Stage VI, Alternate Learning Activities, or the committee will have to go to step 4 of Stage V, and develop the assessments to determine what in fact is wrong. If the assessments are inappropriate, they will have to be rewritten. If the assessments seem to be adequate and agreeable but not congruent with what went before, then the committee will have to go back and review the cluster and module objectives to see if in the process of writing out the objectives the perspectives on what the objectives ought to

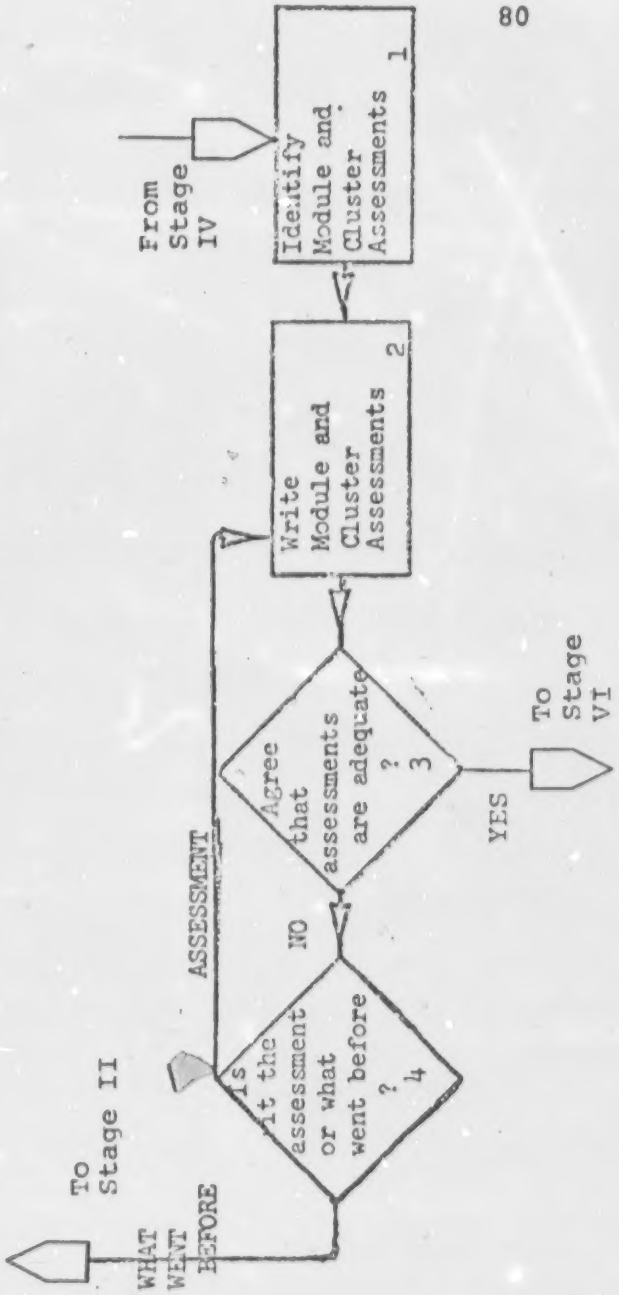
be have changed. The objectives may then have to be rewritten.

Summary of Stage V

At the end of Stage V, The Development of Assessments, the committee will have: a well defined component; the clusters within that component with the cluster objectives, the cluster rationales, the cluster prerequisites and the cluster assessments; the module within each cluster, and the behavioral objectives, rationales, prerequisites and assessments for each module. The group is now ready to consider learning activities.

STAGE VI

In the develcpment of proposals to meet the mandate of the New York State Educcation Deaprtment, working groups do not have to include the


From Stage IV
Identify Module and Cluster Assessments 1
Write Module and Cluster Assessments 2
Agree that assessments are adequate ? 3
YES
To Stage VI
NO
Is it the assessment or what went before ? 4
ASSESSMENT
To Stage II
WHAT WENT BEFORE

Alternate learning activities defined on page 36.

specification of learning activities to meet the objectives. Nor do they have to include the procedures which will apply to the implementation of the program. These omissions lend emphasis to our experience that learning activities and procedures should not be considered until objectives have been set, rationales written and assessments established. If learning activities are allowed to be considered before this point, the favorite or current learning activities tend to dominate and dictate the program. Learning activities are means. Once the objectives or ends have been fully established, clarified and reviewed through the stages and steps outlined above, consideration can be given to the selection of means or learning activities.

Whatever style of instruction is being employed it is usually desirable, if not necessary, to provide alternate learning activities.

Any learning activity is a set of materials and/or activities which will assist a learner in meeting an objective. It excludes materials, and experiences and activities which are extraneous to the objective, and includes a selection of materials and/or experiences, each of which leads to successful achievement of the objective.

The inclusion of alternate learning activities meets either or both of two basic needs. First, the need to provide learners with a choice in learning style and therefore a choice in materials and experiences, all of which meet the stated objective.

The second need for alternate learning activities and materials arises from the possible need to remediate. The student who misses a lecture or fails a test is normally guided to other materials or means of "making up the work."

STAGE VI
Step 1

List some of the various alternative learning activities which will facilitate the meeting of the module objectives.

STAGE VI
Step 2

We write out these learning activities in as much detail as seems advisable to the committee. It should be recognized that the instructor who is eventually charged with implementing the program will have valuable ideas to add.

Further, every learner has the potential and often will, if the option is made available, create other alternate learning activities. These should be recognized as legitimate if they do in fact enable the learner to meet the stated objective. While all parts of a CBTE program should be under a process of renewal and review, the learning activity section should be more flexible and open to change than any other element.

In writing out learning activities considerations might be given to the following list. It might suggest some alternatives which have not been used in the past or which do not fit the style of the present program but might be useful to the new program.

Listening to a lecture
readings
oral reports
simulations
role playing

micro teaching
laboratory exercises
independent investigations
interviewing
participation
observation with a guide
outlining
recording on film
preparing a display
creating a two or three
dimensional model
collecting data
worksheets
group discussion

STAGE VI
Step 3

Review carefully the learning activities, as to whether they are stated as general suggestions or very specifically, and are relevant to the objective. It sometimes happens that through the process of specifying means one comes to reconsider ends. In this case when some effort is spent on specifying alternate learning activities questions emerge about the worth, placement or wording of the objectives. If such questions of worth, placement and wording

do not come up, move to STAGE VII.

Summary of Stage VI

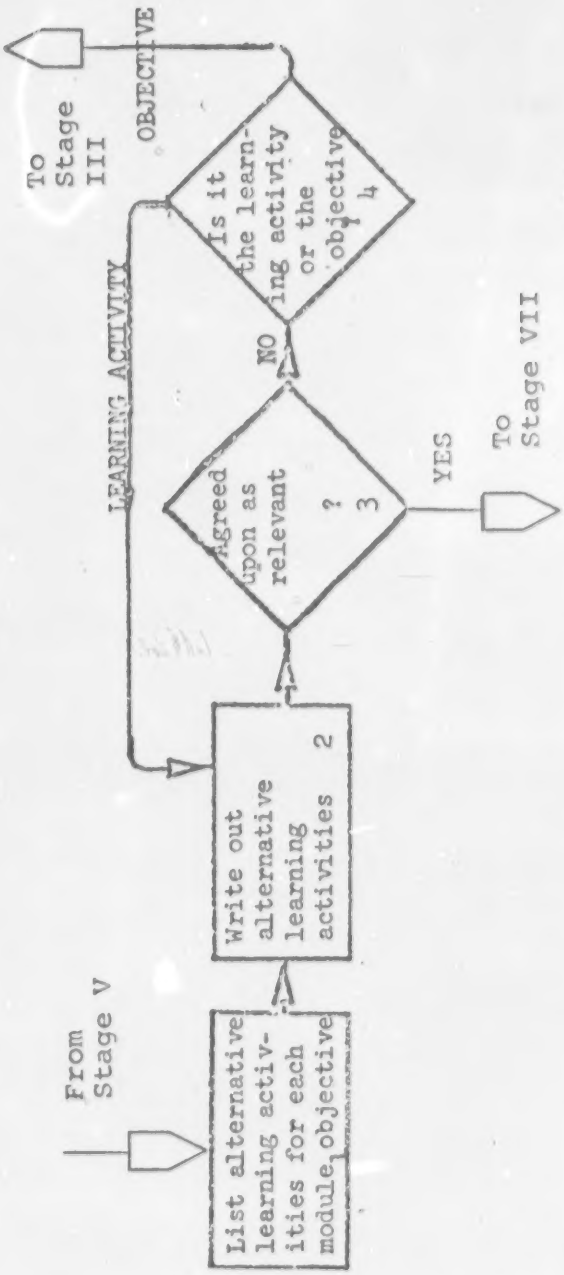
At the conclusion of Stage VI the committee has a nearly complete curriculum. Perhaps procedures for use and the coordination of the work of this committee with others is all that needs to be added.

STAGE VII
Procedures
Step 1

Identify or list the procedures which need to be specified in order to relate all the elements of the module to each other and indicate the flow from one element to the next.

From the flow chart "Elements and Flow of a Cluster", page 89, it can be seen that there are at least four decisions which have to be made as a student progresses through a cluster. They are:

1. Is this cluster appropriate at this time?


From Stage V
List alternative learning activities for each module objective 1
Write out alternative learning activities 2
Agreed upon as relevant ? 3
NO
YES
Is it the learning activity or the objective ? 4
LEARNING ACTIVITY
OBJECTIVE
To Stage III
To Stage VII

Role of remediation discussed on pages 38-39.

2. Which module should be done next?

3. Are all the required modules complete?

4. Is the cluster assessment complete?

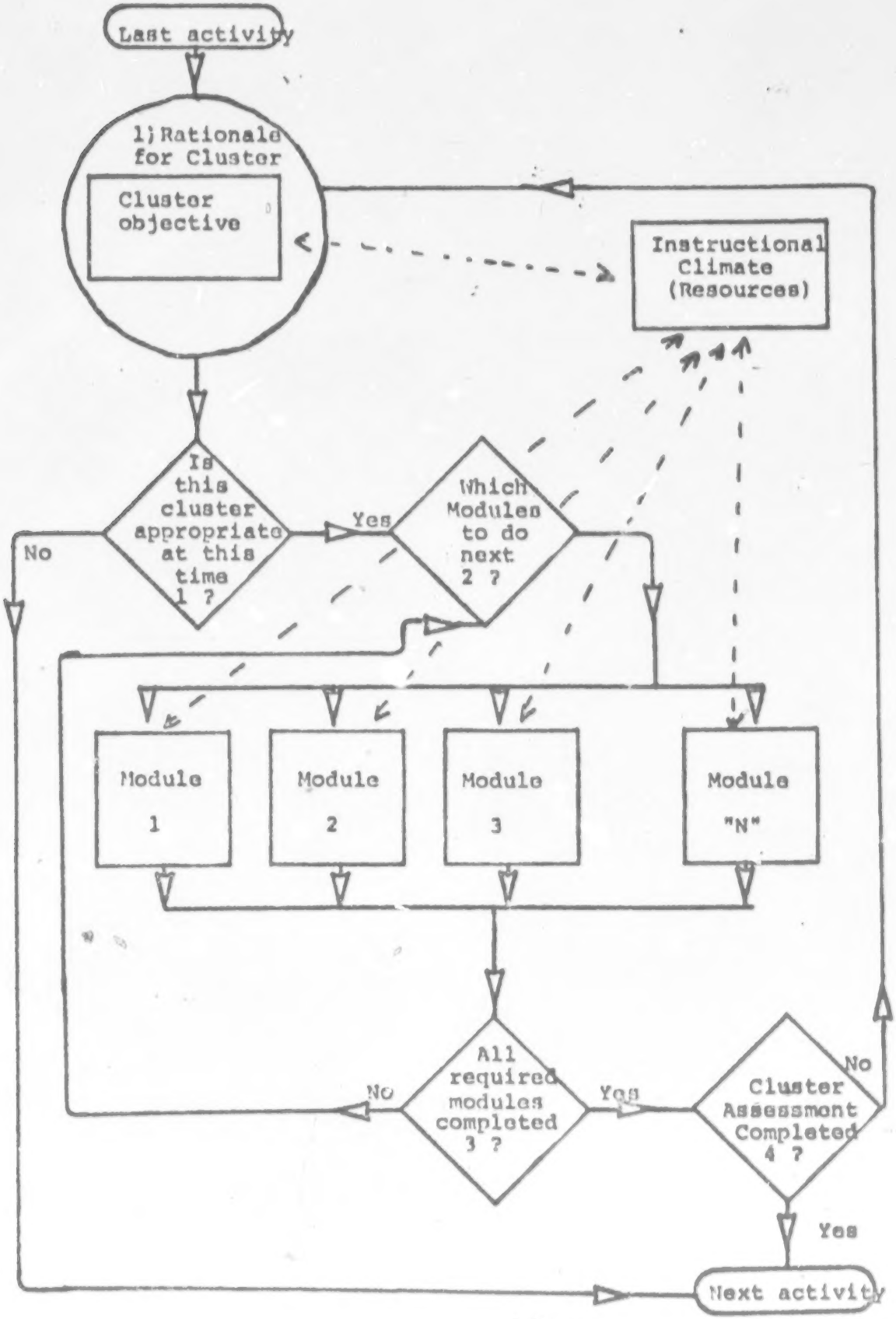
STAGE VII
Step 2

Establish a procedure for each of the questions in step 1. A decision has to be made as to who will answer these questions, how and where the answers will be recorded. In addition, decisions have to be made about the instructional climate and resources which will be supplied to support the students' progress.

The working group may well be able to make some of these decisions at this time, before the cluster is implemented. In many cases these procedural decisions must be delayed and

answered only be stating who has
to make the decision and at
what point.

ELEMENTS AND FLOW OF A CLUSTER
CMD-74



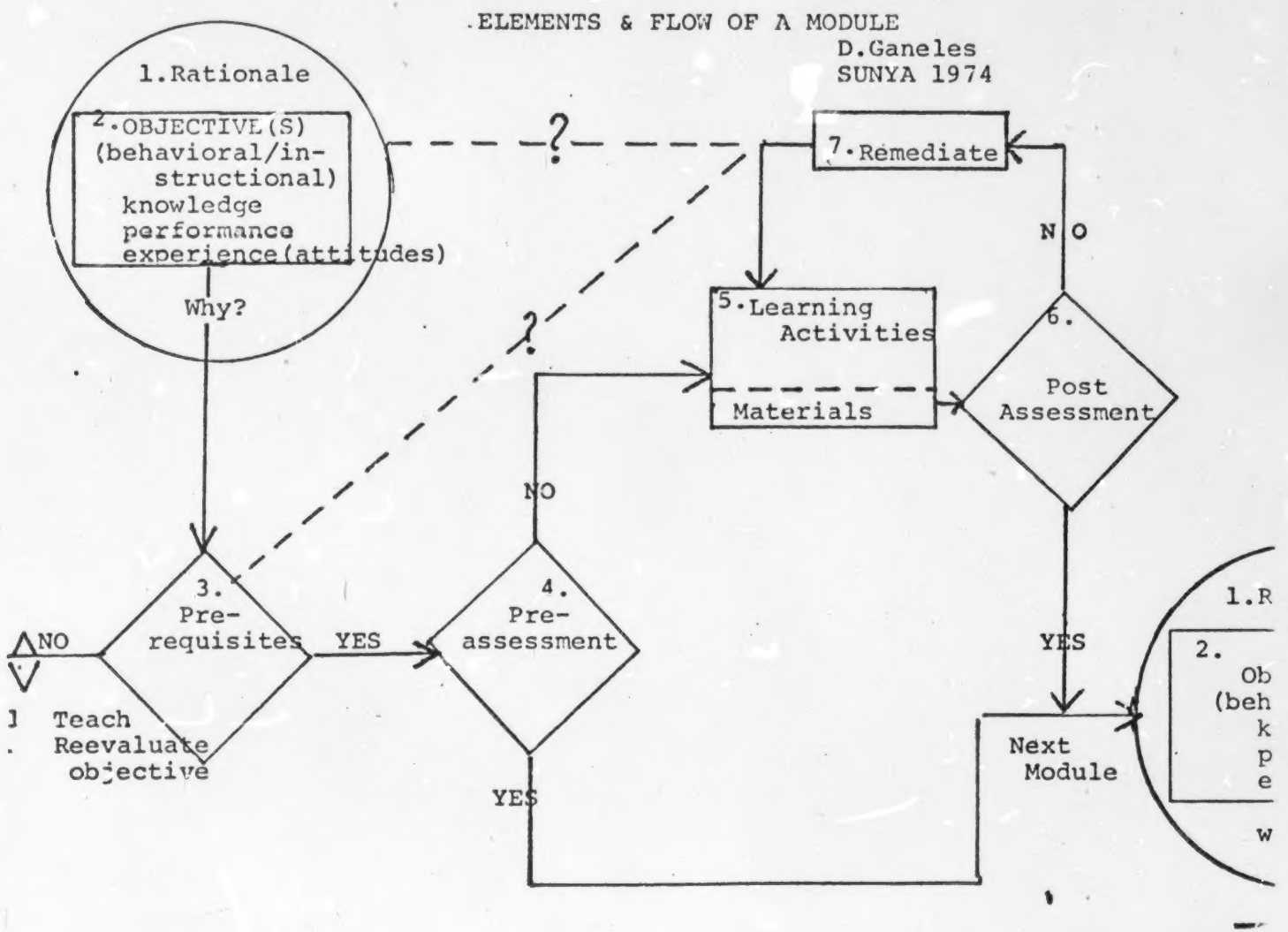
The flow chart "Elements and Flow of a Module", page 91, indicated three decisions symbolized be diamonds in the chart. They are:

1. Does the learner possess the prerequisites?
2. Can the learner pre-assess out of the module? That is, does the learner already have the competence specified in the objective?
3. Following some learning activity, has the learner met the objective or is remediation necessary?

In step two of Stage VII a procedure has to be established for each of these decisions; who is to make the decision? How and where will the answer be recorded?

STAGE VII
Step 3 and 4

Stage VII is completed as these procedures are agreed upon as feasible by the working group. There is a remote possibility that the program and procedures as worked out


ELEMENTS & FLOW OF A MODULE
D.Ganeles
SUNYA 1974
1.Rationale
2.OBJECTIVE(S)
(behavioral/in-
structional)
knowledge
performance
experience(attitudes)
Why?
7.Remediate
NO
5.Learning
Activities
Materials
6.
Post
Assessment
NO
3.
Pre-
requisites
NO
Teach
Reevaluate
objective
YES
4.
Pre-
assessment
YES
YES
Next
Module
1.R
2.
Ob
(beh
k
p
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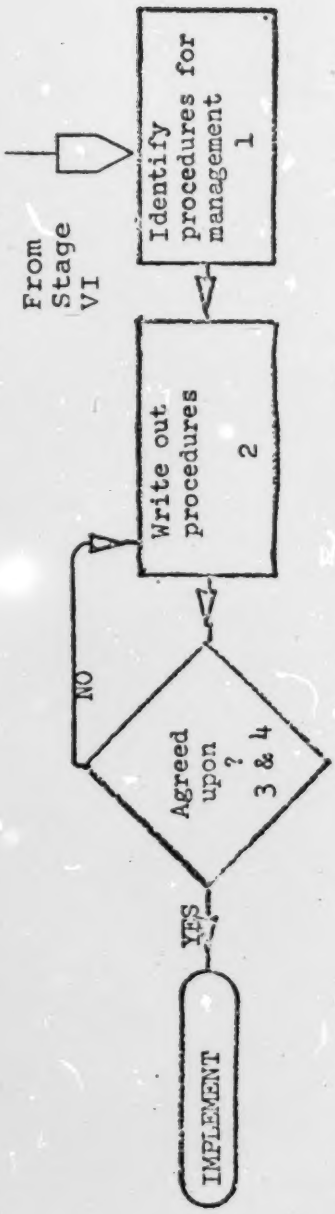
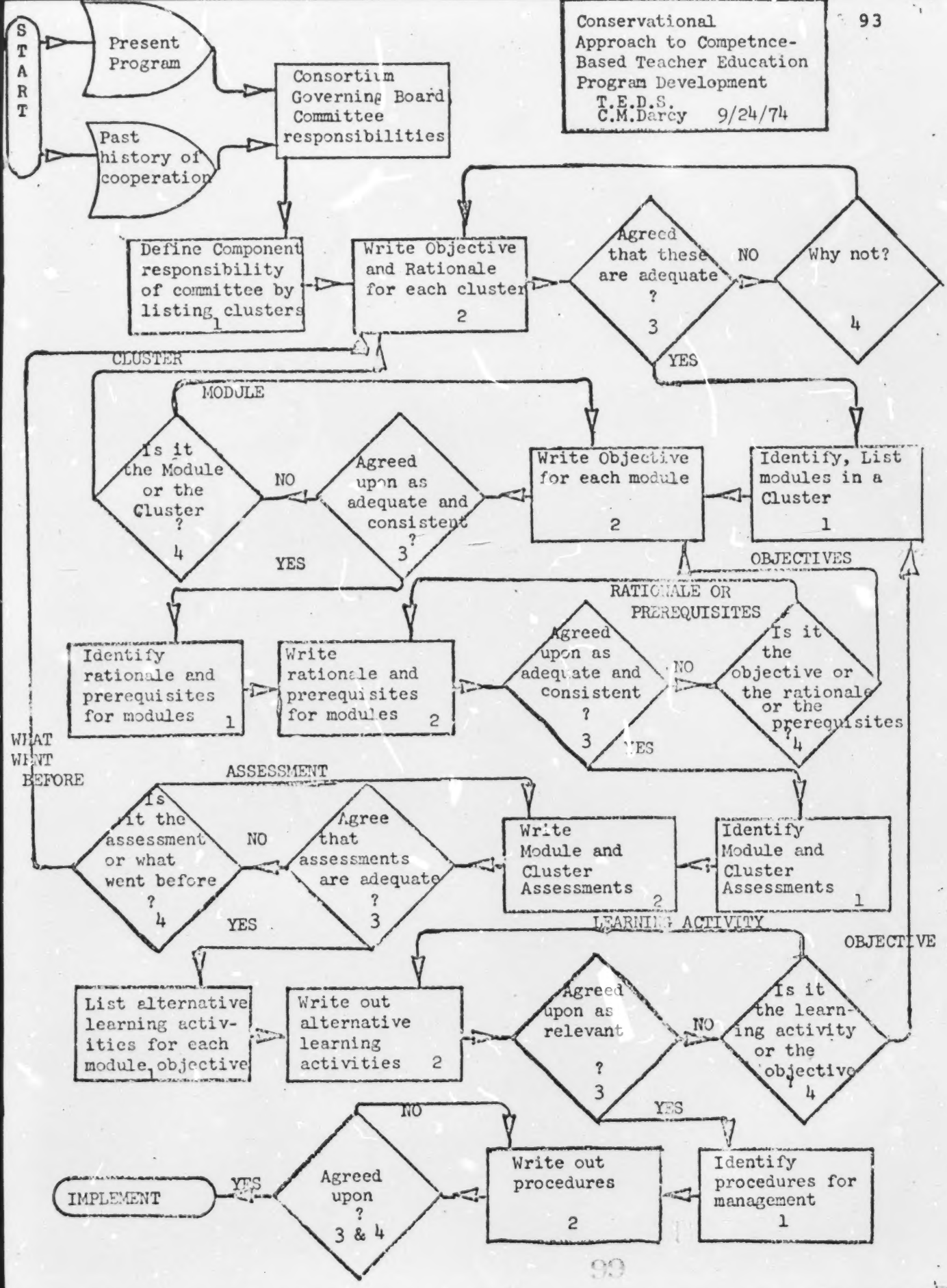
w

do not fit the resources available to operate the program. In most cases this does not happen because the membership of the working groups was established in the first place to include people who had a knowledge of present program and practices, and of the past history of institutional cooperation. If this does happen however, the groups have two choices, either revise the program they have just written or find ways of changing or adapting the resources to be made available to the program.

The total combined flow chart for all these stages and steps is presented on the next page.



Conservational Approach to Competnce-Based Teacher Education Program Development
T.E.D.S.
C.M.Darcy 9/24/74


START
Present Program
Past history of cooperation
Consortium Governing Board Committee responsibilities
Define Component responsibility of committee by listing clusters 1
Write Objective and Rationale for each cluster 2
Agreed that these are adequate ? 3
NO
Why not? 4
YES
CLUSTER
MODULE
Is it the Module or the Cluster ? 4
NO
Agreed upon as adequate and consistent ? 3
YES
Write Objective for each module 2
Identify, List modules in a Cluster 1
OBJECTIVES
RATIONALE OR PREREQUISITES
Identify rationale and prerequisites for modules 1
Write rationale and prerequisites for modules 2
Agreed upon as adequate and consistent ? 3
NO
Is it the objective or the rationale or the prerequisites ? 4
YES
WHAT WENT BEFORE
ASSESSMENT
Is it the assessment or what went before ? 4
NO
Agree that assessments are adequate ? 3
YES
Write Module and Cluster Assessments 2
Identify Module and Cluster Assessments 1
LEARNING ACTIVITY
OBJECTIVE
List alternative learning activities for each module objective 1
Write out alternative learning activities 2
Agreed upon as relevant ? 3
NO
Is it the learning activity or the objective ? 4
YES
NO
IMPLEMENT
YES
Agreed upon ? 3 & 4
Write out procedures 2
Identify procedures for management 1

Summary of Stages and Steps in a Conservational Approach to Competence-Based Teacher Education Curriculum Development

STAGES 1-7

STAGE 1 - Develop a committee structure and identify the components of the present program. Follow steps 1-4 below.

STAGE 2 - Identify, write objectives, write a rationale for each cluster in each component. Follow steps 1-4 below.

STAGE 3 - Identify, write objectives for each module in each cluster. Follow steps 1-4 below.

STAGE 4 - Write rationale and prerequisites for each module objective. Follow steps 1-4 below.

STAGE 5 - Write out sample assessments for each module objective, and for those cluster objectives where appropriate. Follow steps 1-4 below.

STAGE 6 - Design alternate learning activities to reach each objective. Follow steps 1-4 below.

STAGE 7 - Develop procedures for management and administration of component. Follow steps 1-4 below.

STEPS 1-4

STEP 1 - Identify, that is list, in a brainstroming manner the elements to be considered.

STEP 2 - Write out the objective, rationale, prerequisites or whatever.

STEP 3 - Agree that the list and the written-out form are internally adequate and acceptable to the committee.

STEP 4 - Check for congruence with what was done before and resolve any cases of poor fit, either by rewriting what was done before or reworking what is now under consideration; then,

Move on to next stage.

When Stage VII has been completed for one cluster the next step is to go back and go through Stages III through VI for the other clusters which the committee identified in Stage II. When all the clusters and their subsumer modules have been written to the satisfaction of the committee, an overall goal and rationale statement can be written to define the component. In some cases the component may have its own assessment but in most cases the component assessment

consists of the several cluster assessments.

The assessment of a student's completion of a program, in most cases, is the sum of the assessments of the components. When a student has post-assessed out of all the components, that student has completed the program. Sometimes a comprehensive exam is employed as a nominal program assessment. In fact, the comprehensive often becomes another component rather than the summative assessment as its name would imply.

When the total program has been written and implementation has begun, it will immediately be obvious that some things in the new program will have to be changed. For this reason the final STEP of the final STAGE is to be sure that a program evaluation and renewal procedure have been provided.

PROGRAM EVALUATION AND RENEWAL

There is little likelihood that a program can be born so complete, precise and correct that use and aging fail to remove the need for some change and/or improvement. The renewal or modification of parts of the program will go on continuously. There is no possibility that a program will be so carefully and precisely prepared that it will be perfect and never need improvement. There are, therefore, several decisions which have to be made before a system of evaluation and renewal can be implemented.

The first is, who "owns" the modules, clusters, components and the elements such as rationale, assessments or instructional materials within the program. In order for the institutional promotion and

tenure system to operate, recognition will have to be given to the time and effort spent by faculty academics on the development of CBTE programs. Further, the quality of individual contributions will have to be judged. If this results in the "ownership" of parts of the program by individuals it may be difficult for anyone but the author to rework what has been done without starting from scratch. A balance needs to be struck between individual recognition and the need to modify programs.

Another question which will arise is who has or can be given authority to change portions of the program? Can an instructor or a group of instructors modify or delete any of the objectives? Who has authority to modify the assessments

required? Can the committee which prepares a component of the program rewrite any portion without getting approval from some policy making board?

Related to the question of authority is the question of responsibility. When a module doesn't "work," or an assessment is found to be inadequate, who is charged with making the needed changes? Who is to be charged with the responsibility of gathering data and preparing modifications? What procedure should be used?

Finally, on what schedule should the program be renewed? Continuously? Annually? Every semester? And who is bound by the changes? If a student is happy with the "old" module, do they have to use the "new" one?

It is our view that some general suggestions can be made regarding these dilemas. However, enough experience has not been accrued and situations differ so that no one set of recommendations can be applied to every program. If one looks at the next chart as a sort of matching exercise, we believe that the decision makers on the right are matched with the program elements on the left. The individuals and groups on the right might well be given authority and responsibility for renewing the program elements on the left.

It may well be useful for the reader to pencil in the appropriate terms for the reader's own program and institutional structure.

RESPONSIBILITY AND AUTHORITY FOR PROGRAM RENEWAL

Who are the decision makers in your program?

Elements	Decision Makers With Authority And Responsibility To Renew Program
PROGRAM	
Goals Rationale Collaborative Relationship Prerequisites List of Components	Project Board Teacher Education Committee School of Education Curriculum Committee
COMPONENT	
Rationale Goals List of Clusters	Project Board, Management Team and Curriculum Committees of Departments
CLUSTER	
Rationale Objective List of Modules	The Curriculum Committee and the Instructors and the Management Team
Instructional Climate	Management Team and Instructors
MODULE	
Rationale Behavioral Objective	The Instructors and the Curriculum Committee
Prerequisites Assessments	The Instructors and Learners Involved as a Group
Procedures	The Instructors and The Learners
Learning Activities	The Learner

The elements on the left are those specified in the model. The decision makers column may need some explanation. From the top down:

Project or Policy Board - the group consisting of representatives from the institution of higher education, one or more school district administrators and teacher representatives which sets consortium policy.

Management Team - the college and school district administrators responsible for providing resources, rooms, library access, personnel, etc., to the consortium.

Curriculum Committee - the group which writes a program and its components, cluster and modules. It should have representatives from the constituencies represented on the Project Board and may have others on

the basis of expertise and acceptibility to the Project Board.

Instructors - those who teach students in the program - college instruction, professors and field supervisors and cooperating teachers in the public schools.

Learners - those taking the program, education students.

Instructors and Learners as a Group - all those involved in an element of a program at a particular time.

It is our feeling that a cluster should be re-examined for possible revision when each group of students has worked it through, toward the end of each semester. If the material is not reviewed at least this often, informal changes tend to creep in as people make needed improvements or take liberties with the original intent, often obscuring

the initial purpose. The changes made should apply to all those students who have not begun that portion of the old program which has been changed. In addition, those students who have begun, but have not post-assessed out of a program element, should have the option of either the new or the old version.

To insure renewal of the program, the renewal activities should be made a part of the regular calendar of all those involved. Meetings should be scheduled well in advance of the time when students are requested to complete each element of the program. Those concerned with module revision should meet at least weekly for instructional purposes. Those concerned with the revisions of the clusters might well meet several times during a semester. Those concerned with

component revision, at least once each semester.

To facilitate the work of all such groups we suggest a form, such as the one included on page 106 be attached to each module. Post-assessment on each module might well involve filling out such an evaluation. A regular procedure for filing and collating information from such forms would have to be established.

MODULE EVALUATION FORM

INTERN_____ COMPONENT TITLE/NO._____ MODULE#____

INSTRUCTOR_____ DATE COMPLETED_____

Please complete the Module Evaluation Form (MEF) by placing a check mark (x) in the block that most accurately reflects your feeling towards this module.

1=strongly agree; 2=agree; 3=not certain; 4=disagree; 5=strongly disagree; NA=Not Applicable.

	1	2	3	4	5	NA
1. The level of difficulty and sophistication was appropriate.						
2. The rationale for the module was clearly understood.						
3. The objectives clearly indicated what was expected.						
4. The prerequisites (if any) were necessary for module completion						
5. The preassessment was a fair measurement.						
6. The preassessment reflected the competencies as stated in the object.						
7. There was a wide variety of learning activities a.interests that accomodated different b.abilities						
8. The learning activity facilitated the accomplishment of the objectives						
9. The post-assessment reflected the competencies of the objectives						
10. In general the module was logically organized						
11. The learning was sequenced to move from simple to more complex items.						
12. I felt personally involved in what I was learning						
13. I am able to see relationships between classroom instructor and module work.						
14. The most important thing that I learned was contained in one of the objectives.						
15. Resources for module completion were easily accessible.						
16. A reasonable amount of time was given to complete the module.						

COMMENTS (please elaborate) - on both positive and negative aspects of the module, suggestions for improvement, etc. You may use back of form.